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Solar - Geophysical Data

NO. 521 JANUARY 1988

Part II (Comprehensive Reports)

DATA FOR
JULY 1987

Michael A. Chinnery, Director
NATIONAL GEOPHYSICAL DATA CENTER
BOULDER, COLORADO

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NUMBER 521

(Issued in Two Parts)

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C O N T E N T S

PART I (PROMPT REPORTS)

PART II (COMPREHENSIVE REPORTS)

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C O N T E N T S

Comprehensive Reports DATA FOR JULY 1987 Number 521 Part II

C A R T E S Y N O P T I Q U E
A C T I V E R E G I O N S
CARRINGTON ROTATION 1791

(13 July to 9 August 1987)

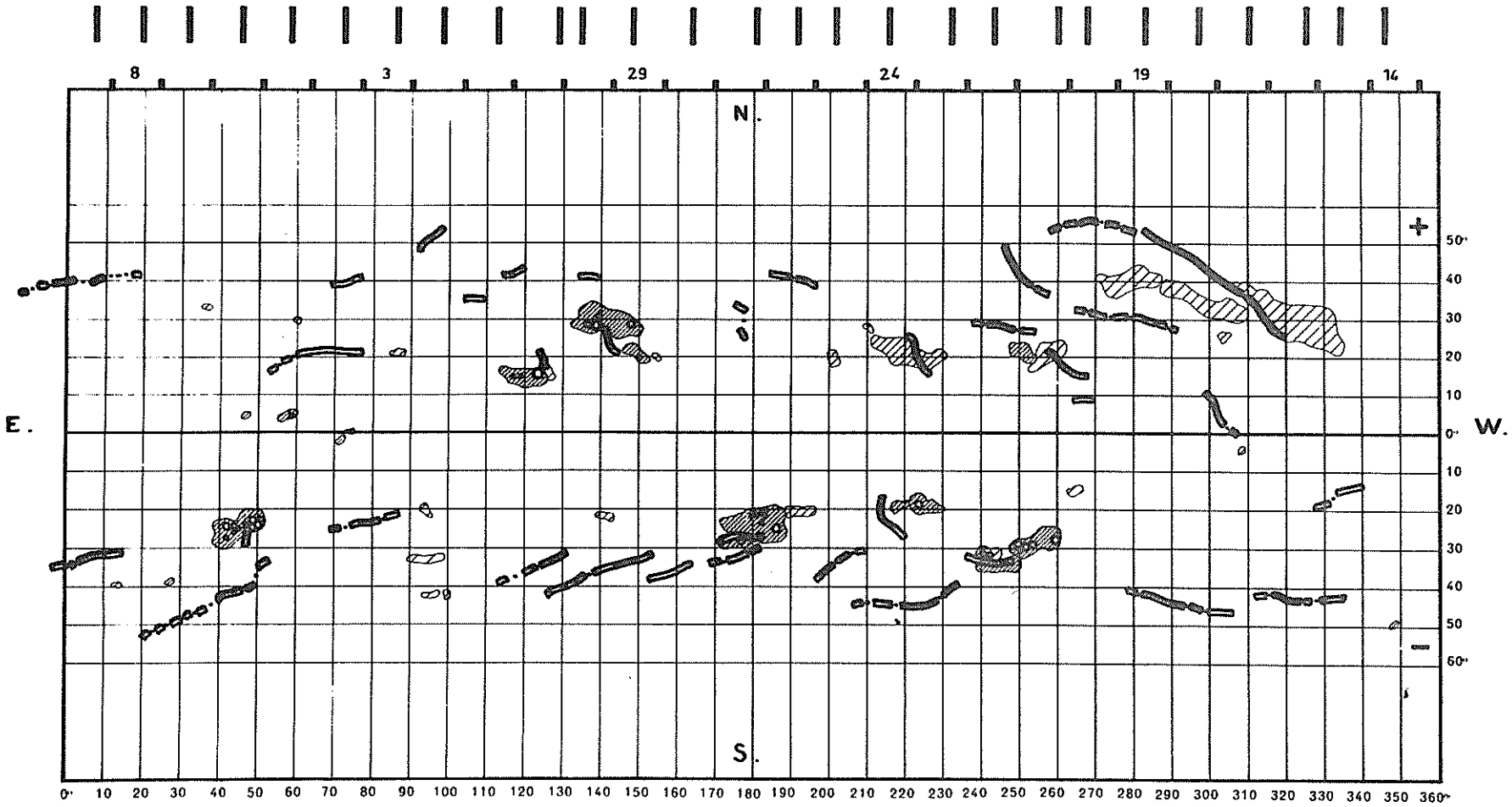
Region No.	Coordinates Lat.	Long.	Imp	Age at CMP (Days)	Spotless Region	Region No. in Rotation 1790	Activity at West Limb
1	30 N	322	1	>6	x	2	decreasing
2	35 N	298	1	>6	x	2	decreasing
3	40 N	279	1	>6	x		decreasing
4	15 S	265	1	+2	x		disappeared
5	21 N	257	1	>6	x	4	dispersed
6	28 S	255	5	+5			stable
7	21 N	251	1	+1	x		dispersed
8	35 S	245	1	>6	x	5	decreasing
9	32 S	242	3	>6			stable
10	19 S	226	2	+4			decreasing
11	21 N	221	1	>6	x		decreasing
12	19 S	219	1	0	x		stable
13	28 N	210	1	+6	x		disappeared
14	20 N	201	1	-5	x		(?)
15	21 S	193	1	>6	x		decreasing
16	24 S	182	4	>6			decreasing
17	29 S	175	2	-2			decreasing
18	20 N	155	1	-1	x		disappeared
19	21 N	149	1	0	x		dispersed
20	22 S	142	1	+5	x		disappeared
21	29 N	142	3	>6			decreasing
22	15 N	120	3	+1			decreasing
23	21 S	95	1	-3	x		dispersed
24	21 N	87	1	+1	x		disappeared
25	4 N	58	2	-3			stable
26	25 S	46	4	+5			decreasing

C A R T E S Y N O P T I Q U E

CARRINGTON ROTATION NUMBER 1791
(13 July to 9 August 1987)

Meudon Observatory

July 1987



Heliographic Longitude

H - ALPHA S O L A R F L A R E S

JULY 1987

Grp #	Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	Obs See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent ($\mu 10^{-6}$ Disk)	Area Measurement Corr (Sq Deg)	Remarks
		01	0111		0132	No Flare Patrol													
0001	HTPR	01	1326	1330	1335	N30	E08	4820	07	2.2	9	SF			C	1330	20		
		02	1712		1717	No Flare Patrol													
		04	2052		2108	No Flare Patrol													
		04	2120		2141	No Flare Patrol													
		05	1018		1021	No Flare Patrol													
		05	1049		1055	No Flare Patrol													
0002	LEAR	08	0551	0551	0601	S18	W40	4822	07	5.2	10	SF		4	C		37		
0003	HTPR	09	1236	1239	1250	S18	W59	4822	07	5.0	14	SF			C	1239	10	.2	
0004	HOLL	09	1429	1433	1447	S20	W60	4822	07	5.0	18	SF		3	C		22		
0005		09	1455*	15129	1526	S19	W60	4822	07	5.0	31	SF					17	.4	E
	HTPR	09	1455	1512	1527	S18	W59	4822	07	5.1	32	SF			C	1512	20	.4	E
	RAMY	09	1511	1521	1526	S19	W61	4822	07	5.0	15	SF		3	C		17		
	HOLL	09	1512	1521	1524	S20	W61	4822	07	5.0	12	SF		3	C		13		
0006	HOLL	09	1549	1556	1629	S19	W59	4822	07	5.1	40	SF		3	C		36		
0007	HOLL	09	1646	1647	1652	S19	W61	4822	07	5.0	6	SF		3	C		17		
		09	1903		1911	No Flare Patrol													
		09	1933		1945	No Flare Patrol													
		09	1949		2036	No Flare Patrol													
		09	2100		2133	No Flare Patrol													
0008	KAND	10	0817	0820	0823	S18	W71	4822	07	4.9	6	SN			P		21		D
		11	1855		1859	No Flare Patrol													
		11	2039		2052	No Flare Patrol													
		11	2205		2216	No Flare Patrol													
		14	1122		1143	No Flare Patrol													
		14	1848		1849	No Flare Patrol													
		14	1856		1912	No Flare Patrol													
		14	2148		2155	No Flare Patrol													
		14	2203		2259	No Flare Patrol													
		15	1007		1014	No Flare Patrol													
0009	KAND	16	1015		1020	N24	W09		07	15.7	5	SF			P				CEG
		16	1605		1627	No Flare Patrol													
		16	1908		1910	No Flare Patrol													
		16	2018		2033	No Flare Patrol													
		16	2217		2246	No Flare Patrol													
		16	2310		2314	No Flare Patrol													
0010	HOLL	17	2157	2157	2159	N22	E86		07	24.5	2	SF		3	C		22		
0011	HOLL	17	2250E	2250U	2256	N26	W82	4823	07	11.6	6D	SF		3	C		26		
0012	YUNN	18	0531	0538	0540D	S28	E43	4826	07	21.6	9D	SN			P		16	.3	D
0013	YUNN	18	0534	0538	0541	N20	E78		07	24.2	7	SN			C		16		EGHW
0014	YUNN	18	0611D	0612	0638	S27	E44	4826	07	21.7	27	SN			P		9	.1	D
0015	YUNN	18	0616	0617	0619	S14	E34		07	20.8	3	SF			C		8	.1	DG
0016	SVTO	18	0840	0840	0846	N20	E76		07	24.2	6	SF		3	C		20		
		19	2149		2151	No Flare Patrol													
0017	KHAR	20	0730		0735	N20	E50		07	24.1	5	SF			V	0730			DH
0018	KAND	20	0820	0825	0845D	S29	E17	4826	07	21.7	25D	SN			P		42	.5	E

H - ALPHA S O L A R F L A R E S

JULY 1987

Grp #	Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp	Opt	Xray	See	Obs Type	Time (UT)	Area Measurement Apparent (10^{-6} Disk)	Area Measurement Corr (Sq Deg)	Remarks
0019	KAND	20	1041	1046	1107	S29	E17	4826	07	21.8	26	SB				P		94	1.2	D
0020	KAND	20	1243	1246	1256	S29	E14	4826	07	21.6	13	SN				P		21	.3	D
0021		20	1814	1815	1844D	N22	E46		07	24.3	30D	SF						33		
	RAMY	20	1814	1815	1840D	N22	E45		07	24.2	26D	SF			3	C		24		
	HOLL	20	1814	1815	1844D	N22	E46		07	24.3	30D	SF			3	C		42		
		20	2033		2040	No Flare Patrol														
		20	2044		2131	No Flare Patrol														
		20	2202		2211	No Flare Patrol														
		20	2231		2256	No Flare Patrol														
		20	2321		2329	No Flare Patrol														
0022	KAND	21	0638	0654	0706	S29	E02	4826	07	21.4	28	SN				P		21	.3	D
0023		21	0710*	07219	0741	S28	E01	4826	07	21.4	31	SN						42	.5	DE
	BUCA	21	0710	0730	0750	S29	E01	4826	07	21.4	40	SN				C	0730	54	.6	D
	KAND	21	0720	0721	0725	S29	E02	4826	07	21.5	5	SF				P		31	.4	D
	KHAR	21	0723E	0723	0747	S27	E01	4826	07	21.4	24D	SN				V	0723			E
0024	KHAR	21	0723E		0734	S25	E78	4827	07	27.3	11D	SF				V	0723			DL
0025	KHAR	21	0732	0732	0737D	N21	E08	4828	07	21.9	5D	SF				V	0732			D
0026	KHAR	21	0940	0943	0955	S27	E02	4826	07	21.5	15	SN				V	0943			D
0027	KAND	21	1035	1037	1042	S24	E70	4827	07	26.8	7	SF				P		21		D
		21	1425		1442	No Flare Patrol														
0028	HOLL	21	1726	1727	1734	S21	E63	4827	07	26.5	8	SF			3	C		21		
		21	2104		2118	No Flare Patrol														
		21	2226		2248	No Flare Patrol														
		21	2255		2259	No Flare Patrol														
0029	KHAR	22	0640		0655D	S30	W09	4826	07	21.6	15D	SF				V	0642			H
0030	KAND	22	1013	1015	1020	S30	W06	4826	07	21.9	7	SF				P		42	.5	DT
0031	KAND	22	1102	1102	1106	S29	W10	4826	07	21.7	4	SN				P		31	.4	ET
0032	KANZ	22	1204	1204	1220	S22	E60	4827	07	27.1	16	SF			2					
0033		22	1230*	12383	1246	S22	E61	4827	07	27.2	16	SF						32	1.0	DT
	KAND	22	1230	1238	1245	S24	E61	4827	07	27.2	15	SN				P		42	1.0	DT
	RAMY	22	1238	1241	1245	S20	E61	4827	07	27.2	7	SF			3	C		22		
	KANZ	22	1240	1240	1249	S22	E60	4827	07	27.1	9	SF			2					
0034	KAND	22	1315	1325	1330D	S29	W12	4826	07	21.6	15D	SN				P		21	.3	DT
0035		22	15186	15261	1554	S29	W14	4826	07	21.5	36	SF	C	2.1				32		
	RAMY	22	1518	1526	1559	S29	W13	4826	07	21.6	41	SN	C	2.1	3	C		47		
	KANZ	22	1523	1527	1555	S30	W13	4826	07	21.6	32	SF			2					
	HOLL	22	1524	1526	1552	S28	W14	4826	07	21.5	28	SF	C	2.1	3	C		24		
	SVTO	22	1536E	1536U	1550	S30	W14	4826	07	21.5	14D	SF	C	2.1	2	C		26		
0036		22	1620*	16474	1704	S29	W12	4826	07	21.7	44	SN	C	2.8				46		F
	RAMY	22	1620	1651	1708	S29	W13	4826	07	21.7	48	SN	C	2.8	3	C		66		F
	HOLL	22	1641	1651	1707	S29	W13	4826	07	21.7	26	SF	C	2.8	3	C		36		F
	KANZ	22	1645	1647	1657	S30	W11	4826	07	21.8	12	SN			2					
	PALE	22	1645E	1651	1705	S29	W12	4826	07	21.7	20D	SN	C	2.8	3	C		35		
0037		22	16481	16481	1652	S22	E56	4827	07	27.0	4	SF						17		
	HOLL	22	1648	1648	1652	S22	E58	4827	07	27.1	4	SF			3	C		17		
	KANZ	22	1649	1649	1653	S22	E55	4827	07	26.9	4	SF			2					

H - ALPHA S O L A R F L A R E S

JULY 1987

Grp #	Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp	Xray	See	Obs Type	Time (UT)	Area Measurement Apparent (10^{-6} Disk)	Area Measurement Corr (Sq Deg)	Remarks
0038		22	16592	17001	1704	S21	E57	4827	07	27.1	5	SF					18		F
	RAMY	22	1659	1700	1702	S20	E58	4827	07	27.1	3	SF		3	C		17		
	HOLL	22	1659	1700	1705	S22	E57	4827	07	27.1	6	SF		3	C		20		F
	KANZ	22	1701	1701	1705D	S22	E55	4827	07	26.9	4D	SF		2					
0039	HOLL	22	1720	1734	1738	S22	E58	4827	07	27.2	18	SF		3	C		16		
0040		22	1802	1802	1813	S21	E58	4827	07	27.2	11	SF					14		
	HOLL	22	1802	1802	1812	S22	E57	4827	07	27.1	10	SF		3	C		13		
	RAMY	22	1802	1802	1814	S20	E58	4827	07	27.2	12	SF		3	C		14		
0041		22	1835*	1846*	1906	S22	E55	4827	07	27.0	31	SF					18		
	RAMY	22	1835	1846	1910	S20	E53	4827	07	26.8	35	SF		3	C		31		
	HOLL	22	1842	1848	1853	S22	E57	4827	07	27.1	11	SF		3	C		14		
	HOLL	22	1855	1855	1908	S23	E53	4827	07	26.9	13	SF		3	C		14		
	PALE	22	1859	1901	1913	S22	E57	4827	07	27.2	14	SF		3	C		11		
0042	RAMY	22	1913	1921	1921	S20	E53	4827	07	26.8	8	SF		3	C		27		
0043		22	1915*	1934*	2001	S28	W16	4826	07	21.5	46	SF	C 1.4				21		F
	RAMY	22	1915	1934	2041	S29	W14	4826	07	21.7	86	SF		3	C		39		
	HOLL	22	1931	1934	1938	S29	W15	4826	07	21.6	7	SF		3	C		17		
	PALE	22	1932	1935	1939	S28	W18	4826	07	21.4	7	SF		3	C		16		
	HOLL	22	2000	2001	2006	S28	W16	4826	07	21.6	6	SF	C 1.4	3	C		14		F
	PALE	22	2003E	2005	2006D	S29	W16	4826	07	21.6	3D	SF	C 1.4	3	C		20		
0044		22	20495	2059	2140D	S28	W16	4826	07	21.6	51D	SF	C 1.9				38		
	RAMY	22	2049	2059	2140D	S29	W15	4826	07	21.7	51D	SF	C 1.9	3	C		53		
	HOLL	22	2054	2059	2134D	S27	W17	4826	07	21.5	40D	SF	C 1.9	3	C		22		
		22	2124		2133	No Flare Patrol													
		22	2219		2250	No Flare Patrol													
		22	2317		2321	No Flare Patrol													
0045		23	00102	00242	0028	S29	W18	4826	07	21.6	18	SF					30		
	PALE	23	0010	0024	0032D	S29	W17	4826	07	21.7	22D	SF		2	C		47		
	LEAR	23	0012	0026	0028	S29	W18	4826	07	21.6	16	SF		3	C		14		
0046		23	0018	00213	0024	S22	E54	4827	07	27.2	6	SF					23		
	LEAR	23	0018	0021	0024	S22	E54	4827	07	27.2	6	SF		3	C		13		
	PALE	23	0022E	0024	0032D	S22	E54	4827	07	27.2	10D	SF		2	C		33		
0047		23	0106*	0131*	0148	S30	W17	4826	07	21.7	42	SF					21		F
	PALE	23	0106	0145	0146	S29	W18	4826	07	21.6	40	SF		2	C		19		
	LEAR	23	0121	0131	0151	S31	W16	4826	07	21.8	30	SF		3	C		23		F
0048	LEAR	23	0454	0455	0516	S30	W20	4826	07	21.6	22	SN	C 1.8	3	C		39		U
0049		23	05242	05293	0546	S20	E51	4827	07	27.1	22	SN	C 1.1				62	1.6	DF
	ABST	23	0524	0532	0548	S20	E51	4827	07	27.1	24	SF			C	0532	87	1.6	D
	LEAR	23	0526	0529	0543	S21	E51	4827	07	27.1	17	SN	C 1.1	3	C		37		F
0050	ABST	23	0644	0652	0714	S21	E51	4827	07	27.2	30	SF			C	0703	87	1.6	D
0051		23	0713*	0715*	0744	S29	W21	4826	07	21.6	31	SN	C 2.3				77	1.3	DEFKT
	ABST	23	0713	0725	0819	S27	W20	4826	07	21.7	66	1F			C	0725	349	4.0	EK
	KANZ	23	0715	0715	0730	S30	W21	4826	07	21.6	15	SN		2					
	LEAR	23	0715	0715	0737	S29	W21	4826	07	21.6	22	SN	C 2.3	3	C		31		
	KHAR	23	0715E	0716U	0745	S29	W22	4826	07	21.6	30D	SN			V	0716			ET
	KAND	23	0715	0718	0722	S30	W20	4826	07	21.7	7	SN			P		10	.1	DEF
	KANZ	23	0719	0727	0745	S29	W20	4826	07	21.7	26	SN		2					
	BUCA	23	0720	0729	0800	S29	W20	4826	07	21.7	40	1N	C 2.3		C	0729	215	2.8	E
	KAND	23	0722	0723	0736	S29	W21	4826	07	21.7	14	SN			P		21	.3	DEF
	KAND	23	0723		0733	S29	W19	4826	07	21.8	10	SF			P		26	.3	DEF
	SVTO	23	0723	0725	0732	S31	W20	4826	07	21.7	9	SF	C 2.3	2	C		18		
	SVTO	23	0735	0749	0750	S30	W21	4826	07	21.7	15	SF		3	C		13		
	KAND	23	0756		0800	S28	W24	4826	07	21.4	4	SN			P		10	.1	D
	KHAR	23	0757	0800	0800D	S28	W24	4826	07	21.4	3D	SN			V	0757			T
0052	BUCA	23	0732	0737	0800	S24	E50	4827	07	27.2	28	1F			C	0737	128	2.3	E

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0053	KHAR	23	0808E	0813	0818	S33	W16	4824	07	22.1	10D	SF			V	0813			T
0054	KHAR	23	0814	0815U	0820D	S28	W24	4826	07	21.5	6D	SN			V	0815			T
0055	KHAR	23	0817		0820D	S19	E09	4829	07	24.0	3D	SF			V	0817			DH
0056	KAND	23	0854		0900	S19	E09	4829	07	24.0	6	SF			P				D
0057		23	09203	09221	0945	S30	W22	4826	07	21.6	25	SF	C	3.1			47		
	SVTO	23	0920	0922	0947	S31	W22	4826	07	21.6	27	SF	C	3.1	C		47		
	KANZ	23	0923	0923	0943	S30	W21	4826	07	21.7	20	SF		2					
0058	KHAR	23	0950E		0955D	S27	W26	4826	07	21.4	5D	SN			V	0950			GT
0059	KAND	23	0957		1002	S34	W07	4824	07	22.8	5	SF			P		26	.3	D
0060	HOLL	23	1333	1333	1348	S22	E45	4827	07	27.0	15	SF		3	C		11		
0061		23	13491	13503	1401	S30	W24	4826	07	21.7	12	SF	C	1.1			20		F
	SVTO	23	1349	1350	1406	S30	W24	4826	07	21.7	17	SF	C	1.1	C		26		F
	RAMY	23	1350	1350	1357	S31	W23	4826	07	21.8	7	SF	C	1.1	C		11		F
	HOLL	23	1350	1352	1404	S29	W24	4826	07	21.7	14	SF	C	1.1	C		22		
	KANZ	23	1350	1353	1357	S30	W25	4826	07	21.6	7	SF		2					
0062		23	15573	1601	1612	S19	E04	4829	07	24.0	15	SF					12		
	KANZ	23	1557	1601	1609D	S19	E04	4829	07	24.0	12D	SF		2					
	HOLL	23	1600	1601	1612	S19	E04	4829	07	24.0	12	SF		4	C		12		
0063		23	1657	1657	1702	S30	W26	4826	07	21.7	5	SF					21		F
	HOLL	23	1657	1657	1702	S30	W25	4826	07	21.7	5	SF		3	C		21		F
	KANZ	23	1657	1657	1702	S30	W26	4826	07	21.7	5	SF		2					
0064	PALE	23	1715	1715	1728	S29	W26	4826	07	21.7	13	SF		3	C		21		
0065		23	1726*	1804*	1828	S29	W28	4826	07	21.5	62	SF	C	2.6			26		EF
	RAMY	23	1726	1804	1811	S29	W28	4826	07	21.5	45	SF		3	C		14		
	RAMY	23	1813	1815	1845	S29	W28	4826	07	21.6	32	SN	C	2.6	3	C	43		
	HOLL	23	1814	1815	1835	S28	W28	4826	07	21.6	21	SF	C	2.6	3	C	34		FE
	PALE	23	1819	1819	1823	S29	W28	4826	07	21.6	4	SF	C	2.6	3	C	12		F
0066	HOLL	23	1836	1842	1848	S22	E43	4827	07	27.1	12	SF		3	C		15		
0067		23	19115	19233	1944	S30	W28	4826	07	21.6	33	SN	C	3.7			28		E
	HOLL	23	1911	1923	1945	S29	W28	4826	07	21.6	34	SN	C	3.7	3	C	43		E
	PALE	23	1916	1926	1943	S30	W29	4826	07	21.5	27	SF	C	3.7	3	C	14		
		23	1932		1941	No Flare Patrol													
		23	1949		2023	No Flare Patrol													
		23	2031		2154	No Flare Patrol													
		23	2229		2232	No Flare Patrol													
		23	2237		2318	No Flare Patrol													
0068		24	0022*	0035*	0120	S28	W31	4826	07	21.6	58	1N	C	3.7			160	2.8	EFIJT
	HOLL	24	0022	0035	0055D	S28	W28	4826	07	21.8	33D	SF	C	3.7	3	C	50		FE
	MITK	24	0032	0057	0119D	S29	W29	4826	07	21.7	47D	1N			C	0057	180	2.7	E
	URUM	24	0035	0040	0105	S29	W31	4826	07	21.6	30	SN	C	3.7	C		63	.9	ET
	VORO	24	0049E	0059U	0129	S29	W33	4826	07	21.4	40D	1F			C	0059	314	4.6	EIJT
	PURP	24	0058E	0104	0127	S28	W34	4826	07	21.4	29D	1N			C	0104	193	2.9	E
0069		24	08177	0819	0848	S28	W36	4826	07	21.5	31	1N	C	1.4			28		
	SVTO	24	0817	0819	0837	S29	W35	4826	07	21.6	20	SN	C	1.4	3	C	28		
	KHAR	24	0824		0900	S26	W37	4826	07	21.5	36	1F			V	0828			
0070		24	09553	10005	1052	S28	W36	4826	07	21.6	57	1B	M	3.0			100	1.0	DEFGHTV
	KHAR	24	0955	1000	1114D	S27	W36	4826	07	21.6	79D	2B			V	1000			GHV
	SVTO	24	0956	1000	1055	S29	W36	4826	07	21.6	59	1B	M	3.0	3	C	139		F
	KANZ	24	0958	1005	1057	S27	W36	4826	07	21.6	59	1B			2				
	KAND	24	1009E		1045	S29	W37	4826	07	21.5	36D	SB			P		62	1.0	DEFT

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0071		24	11092	11092	1113	S22	E35	4827	07	27.1	4	SF					13		DH
	KANZ	24	1109	1109	1112	S22	E34	4827	07	27.1	3	SF		2					
	KHAR	24	1109	1110U	1112	S23	E36	4827	07	27.2	3	SF			V	1110			DH
	SVTO	24	1111	1111	1115	S20	E34	4827	07	27.1	4	SF		3	C		13		
0072		24	15512	1556	1619	N31	E70	4831	07	30.2	28	SN	C 1.0				60		
	SVTO	24	1551	1556	1618	N31	E69	4831	07	30.1	27	SN	C 1.0	3	C		58		
	RAMY	24	1553	1556	1620	N31	E70	4831	07	30.2	27	SF	C 1.0	3	C		62		
0073		24	1654*	1702*	1814	N20	W10	4825	07	23.9	80	SF					66		EFU
	RAMY	24	1654	1702	1824D	N22	W11	4825	07	23.8	90D	SN		2	C		73		UE
	PALE	24	1659	1702	1715	N19	W10	4825	07	23.9	16	SF		3	C		12		
	SVTO	24	1700E	1702U	1712D	N19	W10	4825	07	23.9	12D	SF		2	C		31		F
	PALE	24	1721	1734	1751	N20	W11	4825	07	23.9	30	SF		3	C		45		U
	HOLL	24	1755E	1755U	1935	N22	W11	4825	07	23.9	100D	1F		3	C		171		UF
0074	HOLL	24	1938	1938	2003	S27	W42	4826	07	21.5	25	SF		3	C		12		
		24	2101		2112	No Flare Patrol													
0075		25	0620*	0627*	0709	S27	W51	4826	07	21.3	49	SN	C 1.6				90	2.2	D
	BUCA	25	0620	0627	0705	S27	W50	4826	07	21.4	45	SB	C 1.6		C	0627	107	2.0	D
	SVTO	25	0623	0630	0649	S28	W52	4826	07	21.2	26	SF	C 1.6	3	C		24		
	ABST	25	0624	0629	0733	S27	W50	4826	07	21.4	69	SN			C	0627	87	1.7	D
	YUNN	25	0656	0659	0710	S27	W51	4826	07	21.3	14	1N			C		141	2.8	
0076	SVTO	25	0840	0845	0901	S20	E20	4827	07	26.9	21	SF		3	C		32		
0077		25	10528	10559	1115	S22	E22	4827	07	27.1	23	SF					52		L
	RAMY	25	1024E	1055	1112	S22	E22	4827	07	27.1	48D	SF		3	C		19		
	SVTO	25	1052	1055	1206D	S22	E21	4827	07	27.1	74D	SF		3	C		86		
	KHAR	25	1100	1104	1118	S22	E22	4827	07	27.1	18	SF			V	1104			L
0078	RAMY	25	1145	1147	1158	S20	W17	4829	07	24.2	13	SF	C 1.1	3	C		12		
0079	RAMY	25	1235	1235	1240	S30	W48	4826	07	21.7	5	SF		3	C		25		
0080		25	15242	1526*	1604	S28	W54	4826	07	21.4	40	SN					22		
	RAMY	25	1524	1539	1610	S29	W54	4826	07	21.4	46	SF		3	C		25		
	HOLL	25	1526	1526	1557	S27	W54	4826	07	21.4	31	SN		3	C		19		
0081		25	16325	16382	1648	S29	W50	4826	07	21.8	16	SN					18		E
	HOLL	25	1632	1640	1659	S28	W52	4826	07	21.6	27	SN		3	C		27		E
	PALE	25	1636E	1638	1643	S29	W48	4826	07	21.9	7D	SN		2	C		14		
	RAMY	25	1637	1639	1643	S30	W51	4826	07	21.7	6	SF		3	C		12		
0082	HOLL	25	1744	1746	1754	S28	W54	4826	07	21.5	10	SF		3	C		18		
0083	RAMY	25	1814	1815	1819	N31	E58	4831	07	30.3	5	SF		3	C		16		
0084	HOLL	25	1841	1846	1853	S28	W55	4826	07	21.5	12	SF		3	C		15		
		25	2050		2101	No Flare Patrol													
0085		25	2107	2122U	2212	S28	W59	4826	07	21.3	65	1N	C 5.5				163	6.7	EFIJT
	HOLL	25	2107	2122U	2153	S27	W58	4826	07	21.4	46	SN	C 5.5	3	C		48		F
	VORO	25	2136E	2143U	2230	S29	W60	4826	07	21.2	54D	2F			C	2143	278	6.7	EIJT
		25	2113		2114	No Flare Patrol													
0086		25	2200*	22154	2302	S19	W29	4829	07	23.7	62	SF	C 2.4				108	2.2	E
	VORO	25	2200	2220U	2315	S19	W29	4829	07	23.7	75	1F			C	2220	170	2.2	E
	CULG	25	2206	2215	2215D	S19	W29	4829	07	23.7	9D	SF	C 2.4		C		100		
	HOLL	25	2218	2219	2249	S18	W28	4829	07	23.8	31	SF	C 2.4	3	C		54		
0087	YUNN	26	0303E	0303U	0307	S26	E14	4827	07	27.2	4D	SN			P	0303	8	.1	D
0088		26	0316*	0318*	0340	S25	W60	4826	07	21.5	24	SN	C 1.8				16		E
	YUNN	26	0316	0318	0325	S27	W61	4826	07	21.4	9	SN			C		16		E
	YUNN	26	0328	0332	0354	S23	W59	4826	07	21.6	26	SN	C 1.8		C		16		E

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0089	YUNN	26	0353	0358	0426	N30	E54	4831	07	30.4	33	SN				C		11	.2	E
0090	YUNN	26	0547	0550U	0550D	S29	W61	4826	07	21.4	3D	SN				P	0550	94		
0091		26	0921*	09541	1012	S28	W62	4826	07	21.5	51	1N	C	2.6				100		EFH
	SVTO	26	0921	0954	1014	S30	W61	4826	07	21.6	53	SN	C	2.6	3	C		19		F
	KHAR	26	0948	0955	1010	S27	W63	4826	07	21.5	22	1N				P	0956	180		EH
0092	KHAR	26	0958		1023	S31	W54	4824	07	22.1	25	SF				V	1013			DH
0093	RAMY	26	1201	1202	1219	S19	W35	4829	07	23.8	18	SF			3	C		15		
0094		26	13503	1355	1402	S28	W68	4826	07	21.3	12	SN						28		
	RAMY	26	1350	1355	1402	S29	W67	4826	07	21.3	12	SN			3	C		35		
	HOLL	26	1353	1355	1402	S28	W69	4826	07	21.2	9	SF			3	C		22		
0095	HOLL	26	1523	1523	1534	S27	W65	4826	07	21.6	11	SF			3	C		11		
0096	HOLL	26	1806	1809	1836	S18	W39	4829	07	23.8	30	SF			3	C		24		F
		26	1943		1949	No Flare Patrol														
		26	2049		2108	No Flare Patrol														
		26	2114		2221	No Flare Patrol														
		26	2229		2250	No Flare Patrol														
		26	2305		2318	No Flare Patrol														
		26	2322		2336	No Flare Patrol														
		27	0007		0019	No Flare Patrol														
		27	0026		0032	No Flare Patrol														
		27	0042		0110	No Flare Patrol														
		27	0144		0150	No Flare Patrol														
		27	0202		0206	No Flare Patrol														
0097	PALE	27	0224E	0224U	0224D	S27	W71	4826	07	21.6	30D	SF	C	3.8	3	C		11		
0098		27	0446	0722	0747	S30	W78	4826	07	21.1	181	1N						96		DHK
	ABST	27	0446	0518U	0657D	S31	W76	4826	07	21.2	131D	1F				P	0518	96		DK
	KHAR	27	0715E	0722	0747	S28	W80	4826	07	21.0	32D	SN				V	0722			H
0099	HOLL	27	1608	1614	1617	S26	W71	4826	07	22.1	9	SF			3	C		27		
0100	HOLL	27	1639	1641	1650D	S26	W71	4826	07	22.2	11D	SF			3	C		14		
		27	1651		1711	No Flare Patrol														
0101	SVTO	27	1709	1711	1714	S31	W78	4826	07	21.6	5	SF			3	C		10		
0102	HOLL	27	1914E		1927D	S23	W70	4826	07	22.4	13D	SF			3	C		22		
		27	1919		1922	No Flare Patrol														
		27	1938		1942	No Flare Patrol														
		27	2002		2016	No Flare Patrol														
		27	2036		2108	No Flare Patrol														
		27	2120		2149	No Flare Patrol														
		27	2155		2202	No Flare Patrol														
		27	2233		2238	No Flare Patrol														
		27	2301		2306	No Flare Patrol														
		27	2326		2330	No Flare Patrol														
		27	2349		2400	No Flare Patrol														
0103	ABST	28	0446	0449	0501	S22	W23	4827	07	26.4	15	SF				C	0449	70	.9	D
0104	KHAR	28	0655E		0720	S30	W90	4826	07	21.2	25D	SF				V				H
0105	KHAR	28	0755		0806	S28	W90	4826	07	21.3	11	SF				V				H
0106		28	0820*		0838D	S31	W75	4824	07	22.4	18D	SF								H
	KHAR	28	0820		0830D	S31	W75	4824	07	22.4	10D	SF				V				H
	KHAR	28	0836		0838D	S31	W75	4824	07	22.4	2D	SF				V	0836			
0107	KHAR	28	1038		1043	S30	W90	4826	07	21.4	5	SF				V	1038			H

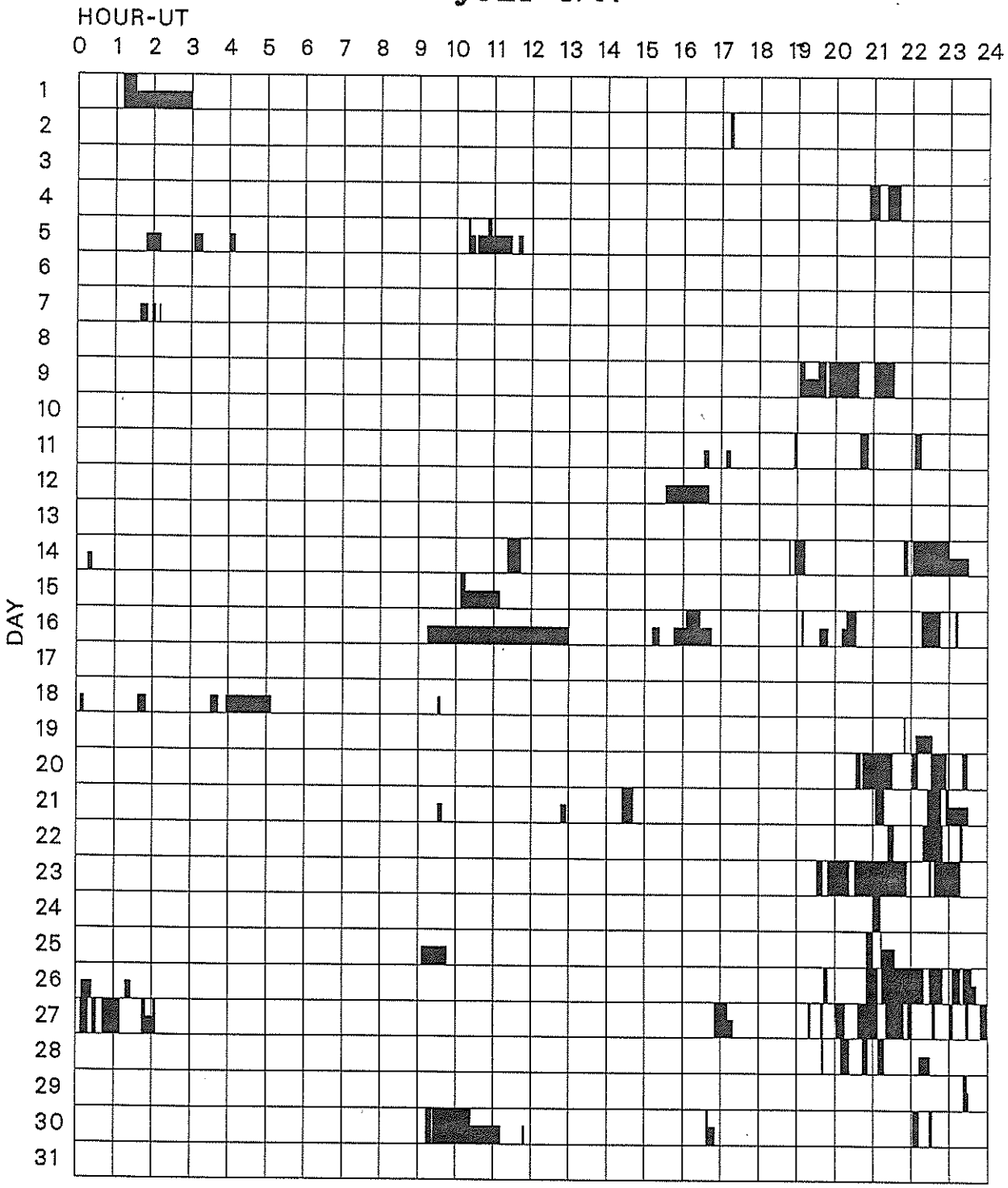
H - ALPHA SOLAR FLARES

JULY 1987

Grp #	Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp	Opt	Xray	See	Obs Type	Time (UT)	Area Measurement Apparent (10^{-6} Disk)	Area Measurement Corr (Sq Deg)	Remarks
		28	1940		1942	No Flare Patrol														
		28	2009		2023	No Flare Patrol														
		28	2044		2052	No Flare Patrol														
		28	2108		2118	No Flare Patrol														
0108		29	07423	07433	0809	N30	E12	4831	07	30.3	27	SN						124	1.4	EY
	ABST	29	0742	0743	0813	N31	E12	4831	07	30.3	31	SF				C	0743	140	1.6	EY
	BUCA	29	0745	0746	0805	N29	E13	4831	07	30.3	20	SN				C	0746	107	1.2	E
0109	HOLL	29	2020	2022	2026	S21	W39	4827	07	26.8	6	SF			3	C		14		
0110		29	20211	20222	2041	N17	W82		07	23.6	20	SF						26		
	HOLL	29	2021	2022	2050	N17	W79		07	23.8	29	SF			3	C		28		
	RAMY	29	2022	2024	2034	N16	W78		07	23.9	12	SF			3	C		28		
	PALE	29	2024E	2024	2040	N17	W88		07	23.2	16D	SF			2	C		21		
0111	RAMY	29	2053	2055	2110	N16	W78		07	23.9	17	SF			3	C		28		
		29	2322		2328	No Flare Patrol														
0112	CULG	30	0140	0142	0142D	S26	W40	4827	07	27.0	2D	SF				C		120		
0113		30	04171	04183	0426	S29	W34	4832	07	27.5	9	SF						54	1.1	D
	LEAR	30	0417	0418	0423	S29	W34	4832	07	27.5	6	SF			3	C		22		
	ABST	30	0418	0421	0428	S29	W33	4832	07	27.6	10	SF				P	0421	87	1.1	D
0114		30	06234	06273	0641	S22	W38	4827	07	27.3	18	SF						47	1.5	E
	ABST	30	0623	0628	0709	S20	W37	4827	07	27.4	46	SF				C	0628	105	1.5	E
	KANZ	30	0626	0630	0634	S22	W37	4827	07	27.4	8	SF			2					
	SVTO	30	0627	0627	0632	S23	W39	4827	07	27.3	5	SF			3	C		19		
	LEAR	30	0627	0628	0630	S21	W37	4827	07	27.4	3	SF			3	C		16		
		30	0913		0922	No Flare Patrol														
		30	0924		1024	No Flare Patrol														
0115	SVTO	30	1114	1119	1124	S29	W36	4832	07	27.6	10	SF			3	C		14		
0116		30	11554	1157	1212	S28	W36	4832	07	27.7	17	SN						16		ET
	RAMY	30	1155	1157	1210	S29	W36	4832	07	27.7	15	SF			3	C		16		
	KAND	30	1159		1213	S26	W37	4832	07	27.6	14	SN				P				ET
0117		30	1159	12018	1220	S22	W39	4827	07	27.5	21	SN						46		FU
	RAMY	30	1159	1201	1221	S21	W39	4827	07	27.5	22	SN			3	C		53		UF
	SVTO	30	1159	1209	1218	S22	W39	4827	07	27.5	19	SF			3	C		38		F
		30	1638		1640	No Flare Patrol														
		30	2203		2213	No Flare Patrol														
		30	2229		2233	No Flare Patrol														
0118	YUNN	31	0040	0041	0056	N16	E10	4834	07	31.8	16	SN				C		8	.1	D
0119	YUNN	31	0045	0046	0054	N20	W24	4833	07	29.2	9	SN				C		31	.4	D
0120	YUNN	31	0048	0050	0054	N31	W08	4831	07	30.4	6	SB				C		16	.2	D
0121	YUNN	31	0147	0149	0158	S30	W44	4832	07	27.6	11	SN				C		47	.8	D
0122		31	0347	0347	0353	N30	W12	4831	07	30.2	6	SN						26		F
	PALE	31	0347	0347	0350	N30	W14	4831	07	30.0	3	SF			2	C		20		F
	LEAR	31	0347	0347	0356	N30	W10	4831	07	30.4	9	SN			3	C		32		F
0123	ABST	31	0830E	0832	0842	N29	W14	4831	07	30.2	12D	SF				P	0832	114	1.4	E
0124	HOLL	31	1831	1900	1912	N15	W01	4834	07	31.7	41	SF			3	C		15		FH

INTERVALS OF NO FLARE PATROL OBSERVATION
FOR PRECEDING SOLAR FLARE TABLE

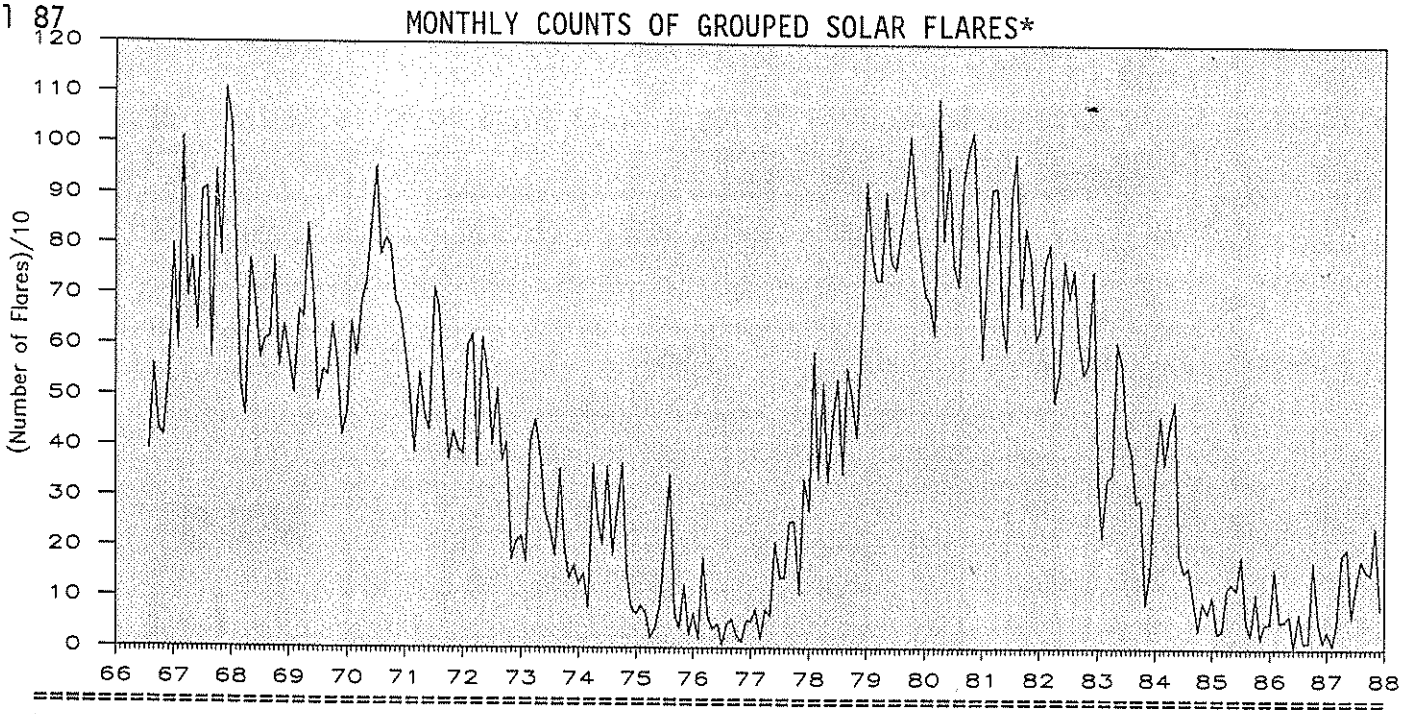
JULY 1987



Times of no flare patrol, shown here as shaded areas, combine reports from the observatories listed below. Portions of a panel completely shaded mark dates and times of no patrol of any kind, that is, of neither visual nor cinematographic; portions of a panel with only the bottom half shaded mark times of strictly visual patrol.

Abastumani	Istanbul	Learmonth	Peking	Tashkent
Bucharest	Kandilli	Lvov	Purple Mt.	Urumqi
Haute Provence	Kanzelhoehe	Manila	Ramey	Voroshilov
Holloman	Kharkov	Palehua	San Vito	Yunnan

MONTHLY COUNTS OF GROUPED SOLAR FLARES*



Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1966								391	558	432	417	543	2341
1967	796	589	1009	694	771	629	907	911	573	946	775	1109	9709
1968	1037	773	519	460	768	697	573	611	616	772	556	640	8022
1969	581	504	669	655	839	694	489	551	540	643	566	422	7153
1970	466	646	578	688	722	836	954	780	811	797	687	667	8632
1971	598	505	387	546	461	430	713	673	518	375	431	394	6031
1972	384	599	621	361	614	541	404	515	371	408	175	210	5203
1973	221	171	410	453	388	270	232	182	353	201	136	163	3180
1974	127	148	79	364	255	204	360	187	270	366	153	81	2594
1975	68	82	69	19	42	85	196	346	68	38	127	25	1165
1976	69	18	180	60	38	48	6	47	57	23	13	55	614
1977	54	77	18	76	64	210	140	140	250	252	107	336	1724
1978	274	588	338	526	330	460	533	346	554	499	418	648	5514
1979	926	781	731	731	907	772	750	821	901	1018	888	786	10012
1980	703	689	621	1092	811	956	763	720	924	988	1027	838	10132
1981	578	782	914	915	658	592	893	982	680	836	773	615	9218
1982	631	766	803	490	553	769	696	753	615	544	564	748	7932
1983	332	220	337	346	609	561	427	389	289	298	88	152	4048
1984	353	461	366	440	492	185	151	161	95	36	92	69	2901
1985	104	29	38	119	129	116	185	53	25	108	19	50	975
1986	51	158	54	56	68	3	71	12	14	174	56	13	730
1987	36	7	51	188	199	59	124	177	157	148	242	78	1466

*Flare counts are preliminary from July 1982 to present. In particular, the monthly totals for the last 6 months may change significantly, as more sites submit their reports. The term "grouped" means that observations of the same event by different stations have been lumped together and counted as one.

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

JULY 1987

Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10^{-22} W/m^2 Hz)	Flux Density Mean (10^{-22} W/m^2 Hz)	Int	Remarks
02	930	BORD	41	F	1714.4	1714.5	.6	16.0	2.0		
03	33	UPIC	43	NS	1203.8		386.2D				
	536	ONDR	8	S	1110.5	1110.5	.5	20.0			
	260	ONDR	8	S	1231.5	1231.5	.3	5.0			
	930	BORD	41	F	1459.2	1459.4	1.6	34.0	3.0		
	9400	HUAN	20	GRF	1801.5	1814.1	27.9	4.9	2.0		
04	430	KRAK	7	C	1231.2	1233.2	2.5	31.0	8.0		
06	430	KRAK	2	S/F	1049.5	1050.7	2.0	37.0	4.0		
	9400	HUAN	1	S	1623.2	1625.8	4.6	2.7	1.2		
	9400	HUAN	1	S	2038.0	2039.2	2.3	10.8	3.1		
07	4995	SVTO	4	S/F	0426.0E	0426.0	15.0D	23.0			QL=5 ST=2 TYP=3
	15400	SVTO	8	S	0426.0E	0428.0	2.0D	47.0			QL=5 ST=2 TYP=3
	8800	SVTO	8	S	0427.0E	0428.0	1.0D	34.0			QL=5 ST=2 TYP=3
	4995	SVTO	8	S	0427.0E	0428.0	1.0D	34.0			QL=5 ST=2 TYP=3
	536	ONDR	8	S	0948.1	0948.3	.3	32.0			
	260	ONDR	8	S	0948.2	0948.2	.2	44.0			
	808	ONDR	8	S	0948.5	0948.5	.2				
	260	ONDR	46	C	1000.5	1000.8	1.5	7.0			
	536	ONDR	4	S/F	1000.7	1000.7	1.0	9.0			
	2800	OTTA	20	GRF	2008.0		352.0D	6.1	3.4		
08	430	KRAK	8	S	0851.0	0851.2	.2	5.0			
	810	KRAK	8	S	0851.0	0851.5	.5	51.0			
	536	ONDR	8	S	1034.8	1034.8	.2	25.0			
	536	ONDR	8	S	1037.5	1037.6		7.0			
09	260	ONDR	43	NS	0926.1	1120.8	281.9D	5.0			
10	808	ONDR	42	SER	0841.3	0843.5	3.2				
	204	IZMI	41	F	1023.0	1042.0	19.0	25.0			
13	930	BORD	8	S	1427.8	1427.9	.2	11.0	2.0		
	9400	HUAN	1	S	1742.8	1746.3	7.0	5.4	1.6		
	9400	HUAN	1	S	1939.6	1940.8	3.0	2.7	.5		
14	260	ONDR	43	NS	0830.0	1257.5	335.0D	20.0			
	810	KRAK	41	F	1027.7	1028.7	4.7	12.0	3.0		
	9400	HUAN	21	GRF	1309.0	1337.5	57.3	5.2	2.1		
	9400	HUAN	2	S/F	1352.7	1355.9	3.9	2.6	1.0		
	9400	HUAN	2	S/F	1817.6	1820.5	4.1	3.9	1.4		
15	260	ONDR	44	NS	0525.0E		501.0D	11.0			
	33	UPIC	43	NS	1607.5		142.5D				
	29	UPIC	43	NS	1607.5		142.5D				
16	260	ONDR	44	NS	0618.0E	0726.5	224.0D	9.0			
	245	LEAR	43	NS	2321.0	0247.0	618.0D	31.0			QL=5 ST=2 TYP=1
	9400	TYKW	20	GRF	0110.0	0132.0	70.0	4.0	2.0		
	3750	TYKW	21	GRF	0110.0	0141.0	85.0	2.0	1.0		
	200	HIRA	8	S	0110.8	0111.2	.8	175.0			0
	245	PALE	4	S/F	0111.0	0111.0		25.0			QL=5 ST=2 TYP=3
	100	HIRA	4	S/F	0111.0	0111.0	3.0	400.0			QL= ST= TYP=3
	245	LEAR	4	S/F	0111.0	0111.0	6.0	29.0			QL=5 ST=2 TYP=3
	3750	TYKW	5	S	0111.0	0112.2	10.0	2.5	1.0		
	2000	TYKW	5	S	0111.0	0112.2	2.0	3.5	1.5		
	1000	TYKW	5	S	0111.3	0112.3	3.5	4.0	1.0		
	500	HIRA	6	S	0111.6	0112.3	2.0	2.0	1.0		0
	2000	TYKW	29	PBI	0113.0		45.0	1.0	.5		
17	260	ONDR	44	NS	0544.0E		218.0D	20.0			
	245	SGMR	43	NS	0944.0	1320.0	520.0	330.0			QL=1 ST=2 TYP=1
	245	PALE	44	NS	1656.0E	1725.0	424.0D	17.0			QL=5 ST=3 TYP=1
	245	LEAR	43	NS	2320.0	0341.0	619.0D	23.0			QL=5 ST=2 TYP=1
	930	BORD	8	S	0856.8	0856.9	.3	44.0	2.0		
	536	ONDR	8	S	1020.2	1020.3	.3	53.0			
	536	ONDR	8	S	1117.0	1117.0	.2	312.0			
	200	HIRA	46	C	2200.7	2201.5	2.2	150.0	54.0		0

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

JULY 1987

Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10^{-22} W/m^2 Hz)	Flux Density Mean (10^{-22} W/m^2 Hz)	Int	Remarks
18	245	SVTO	44	NS	0355.0E	0401.0	1205.0D	20.0			QL=5 ST=1 TYP=1
19	260	ONDR	43	NS	1000.0	1042.0	182.0D	7.0			
	245	LEAR	43	NS	2320.0	0024.0	620.0D	15.0			QL=5 ST=2 TYP=1
	245	PALE	46	C	0409.0E	0409.0	424.0D	77.0			QL=5 ST=2 TYP=5
	808	ONDR	4	S/F	0612.0	0612.2	1.0				
	808	ONDR	1	S	0926.7	0927.0	.5				
	2800	OTTA	20	GRF	1826.0	2230.0	320.0	2.9	2.0		
20	200	HIRA	44	NS	1935.0E	2023.0	420.0D	8.0	4.0		0
	3750	TYKW	5	S	0520.0	0521.2	3.0	1.5	.5		
	810	KRAK	8	S	0826.3	0826.4	.2	8.0			
	204	IZMI	41	F	1003.2	1003.5	1.0	35.0			
	3750	TYKW	20	GRF	2222.0	2230.0	30.0	1.0	.5		
	2000	TYKW	20	GRF	2223.0	2228.0	30.0	1.0	.5		
21	29	UPIC	43	NS	0528.5		539.4				
	260	ONDR	44	NS	0700.0E		491.0D	8.0			
	33	UPIC	44	NS	0800.0E		387.8D				
	200	HIRA	44	NS	1935.0E	2326.0	660.0D	6.0	4.0		0
	245	LEAR	43	NS	2319.0	2329.0	41.0	28.0			QL=5 ST=1 TYP=1
	3100	CRIM	20	GRF	0729.0	0745.5	67.0	2.7	1.0		
	204	IZMI	5	S	1041.8	1041.9	.2	48.0	30.0		
	204	IZMI	5	S	1105.0	1105.2	.2	60.0	40.0		
	245	SGMR	4	S/F	1654.0	1654.0	856.0	26.0			QL=5 ST=2 TYP=3
	245	SGMR	49	GB	1709.0E	1710.0	411.0D	2600.0			QL=5 ST=3 TYP=6
	2800	OTTA	22	GRF	1728.0	2136.0	332.0D	5.3	2.6		
	3750	TYKW	20	GRF	2120.0	2135.0	110.0	2.0	1.0		
	2000	TYKW	20	GRF	2120.0	2135.0	100.0	2.0	1.0		
22	260	ONDR	44	NS	0700.0E	0822.5	103.0D	11.0			
	200	HIRA	44	NS	1935.0E	2036.0	240.0D	5.0	3.0		WL
	245	PALE	46	C	0002.0	0002.0	424.0	100.0			QL=5 ST=2 TYP=5
	245	LEAR	46	C	0002.0	0002.0	41.0	130.0			QL=5 ST=2 TYP=5
	200	HIRA	41	F	0354.9	0355.8	2.4	420.0			WR
	245	PALE	46	C	0356.0	0356.0	1438.0	58.0			QL=5 ST=2 TYP=5
	245	SGMR			1254.0	1254.0	411.0	20.0			QL=5 ST=2 TYP=8
	410	SGMR			1254.0	1254.0	557.0	22.0			QL=5 ST=2 TYP=8
	610	SGMR			1254.0	1254.0	850.0	5.0			QL=5 ST=2 TYP=8
	2800	OTTA	23	GRF	1438.0	2057.0	488.0	8.2	4.1		
	930	BORD	46	C	1557.0	1557.4	5.0	283.0	7.0		
	2695	SGMR	46	C	1557.0E	1558.0	2.0D	52.0			QL=5 ST=2 TYP=5
	2800	OTTA	4	S/F	1557.1	1558.5	6.5	52.5	7.9		
	1415	SVTO	46	C	1558.0	1558.0	2.0	57.0			QL=5 ST=2 TYP=5
	1415	SGMR	8	S	1558.0	1558.0	1.0	42.0			QL=5 ST=2 TYP=3
	2695	SVTO	8	S	1558.0	1558.0	1.0	49.0			QL=5 ST=2 TYP=3
	4995	SGMR	4	S/F	1558.0	1558.0		18.0			QL=5 ST=2 TYP=3
	2800	OTTA	1	S	1628.7	1629.0	3.0	5.6	2.2		
	2000	TYKW	20	GRF	2059.0E	2059.0U	70.0D	2.0D	1.0D		
	3750	TYKW	20	GRF	2059.0E	2059.0U	75.0D	4.0D	2.0D		
	2700	PENT	21	GRF	2243.0	0024.0	142.0	6.9	3.5		
	1000	TYKW	5	S	2256.0	2256.9	3.0	1.0	.3		
	3750	TYKW	21	GRF	2330.0	2357.0	160.0	1.5	.7		
	2000	TYKW	21	GRF	2330.0	2357.0	160.0	1.5	.7		
23	245	SVTO	43	NS	0515.0	1109.0	756.0D	32.0			QL=3 ST=2 TYP=1
	410	SVTO	43	NS	0651.0	1204.0	660.0D	33.0			QL=3 ST=2 TYP=1
	245	PALE	44	NS	1715.0E	2258.0	703.0D	60.0			QL=5 ST=2 TYP=1
	245	LEAR	43	NS	2318.0	0124.0	624.0	13.0			QL=5 ST=2 TYP=1
	2000	TYKW	21	GRF	0008.0	0033.0	70.0	2.0	1.0		
	9400	TYKW	21	GRF	0010.0	0040.0	140.0	4.0	2.0		
	3750	TYKW	21	GRF	0011.0	0035.0	60.0	3.0	1.5		
	1000	TYKW	21	GRF	0018.0	0040.0	110.0	1.0	.5		
	610	LEAR	46	C	0019.0E	0019.0	1.0D	350.0			QL=5 ST=2 TYP=5
	610	PALE	46	C	0019.0E	0019.0	1.0D	390.0			QL=5 ST=2 TYP=5
	3750	TYKW	45	C	0019.0	0020.0	6.0	13.0	2.0		
	1415	LEAR	8	S	0019.0	0020.0	1.0	12.0			QL=3 ST=2 TYP=3
	2695	LEAR	8	S	0019.0	0020.0	1.0	28.0			QL=5 ST=2 TYP=3
	2695	PALE	8	S	0019.0	0020.0	1.0	28.0			QL=5 ST=2 TYP=3
	1000	TYKW	45	C	0019.5	0019.5	5.5	6.0	1.5		
	9400	TYKW	5	S	0019.5	0020.0	1.5	4.0	1.0		

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Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10^{-22} W/m^2 Hz)	Flux Density Mean (10^{-22} W/m^2 Hz)	Int	Remarks
23	2000	TYKW	45	C	0019.5	0020.1	6.5	14.0	2.0		
	2700	PENT	3	S	0019.7	0020.0	2.5	25.9	7.8		
	2000	TYKW	20	GRF	0120.0	0140.0	45.0	1.0	.5		
	9400	TYKW	20	GRF	0120.0	0140.0	50.0	2.0	1.0		
	3750	TYKW	20	GRF	0125.0	0135.0	35.0	1.0	.5		
	2000	TYKW	5	S	0256.5	0257.2	1.5	2.0	.5		
	3750	TYKW	21	GRF	0310.0	0322.0	55.0	2.0	1.0		
	9400	TYKW	20	GRF	0310.0	0336.0	60.0	4.0	2.0		
	3750	TYKW	5	S	0311.0	0312.2	6.0	4.5	1.5		
	3750	TYKW	20	GRF	0328.0	0335.0	30.0	2.0	1.0		
	3750	TYKW	45	C	0452.0	0454.5	4.0	7.0	2.0		
	5900	KISV	21	GRF	0452.5	0454.6	18.0	6.0			
	2950	GORK	22	GRF	0453.1	0454.3	13.0	3.8			
	3750	TYKW	29	PBI	0456.0		15.0	1.5	.7		
	9400	TYKW	5	S	0516.5	0516.9	1.0	11.0	2.0		
	2000	TYKW	21	GRF	0520.0	0600.0	140.0	2.0	1.0		
	2950	GORK	20	GRF	0522.5	0531.0	170.0	4.2			
	3750	TYKW	45	C	0523.0	0528.9	20.0	5.0	3.0		
	5900	KISV	23	GRF	0523.0	0529.2	27.0	12.0			
	2000	TYKW	20	GRF	0525.0	0531.0	25.0	1.5	.7		
	9100	GORK	20	GRF	0526.5	0528.8	31.0	13.0			
	9400	TYKW	5	S	0527.0	0528.7	3.0	9.0	3.0		
	9300	KISV	2	S/F	0528.7	0529.0	1.5	7.0			
	9400	TYKW	29	PBI	0530.0		25.0	4.0	2.0		
	3750	TYKW	30	PBI	0543.0		140.0	3.0	1.5		
	3100	CRIM	20	GRF	0620.0	0630.0	10.0	5.0			QL= ST= TYP=2
	3750	TYKW	21	GRF	0630.0	0637.0	90.0	3.0	1.5		
	9400	TYKW	21	GRF	0630.0	0700.0	100.0	3.0	1.5		
	2000	TYKW	5	S	0639.3	0639.6	4.0	2.0	.5		
	3750	TYKW	20	GRF	0700.0	0720.0	55.0	1.5	.7		
	9400	TYKW	20	GRF	0710.0	0725.0	50.0	3.0	1.5		
	3100	CRIM	20	GRF	0732.0	0739.0	37.0	3.0	1.0		
	2950	GORK	22	GRF	0918.2	0921.3	160.0D	4.2			
	5900	KISV	21	GRF	0920.7	0921.5	13.5	6.0			
	9100	GORK	22	GRF	0921.0	0921.3	78.0	3.6			
	5900	KISV	4	S/F	0921.0	0922.0	16.0	6.0			QL= ST= TYP=3
	245	SGMR	8	S	1134.0	1134.0	1.0	23.0			QL=5 ST=2 TYP=3
	15400	SVTO	4	S/F	1345.0	1346.0	3.0	45.0			QL=5 ST=2 TYP=3
	5900	KISV	4	S/F	1345.5	1346.8U	3.0	352.0			
	1470	POTS	29	PBI	1345.8	1346.6	12.0	20.0			
	9300	KISV	4	S/F	1345.9	1346.8	2.0	51.0			
	610	SGMR	46	C	1346.0E	1346.0		62.0			QL=5 ST=3 TYP=5
	1415	SGMR	8	S	1346.0	1346.0	1.0	22.0			QL=5 ST=3 TYP=3
	15400	SGMR	4	S/F	1346.0	1346.0		27.0			QL=5 ST=3 TYP=3
	2695	SVTO	8	S	1346.0	1346.0	1.0	47.0			QL=5 ST=2 TYP=3
	4995	SGMR	8	S	1346.0	1346.0	1.0	39.0			QL=5 ST=3 TYP=3
	2695	SGMR	45	C	1346.0	1346.0	1.0	50.0			QL=5 ST=3 TYP=5
	4995	SVTO	8	S	1346.0	1346.0	1.0	48.0			QL=5 ST=2 TYP=3
	8800	SGMR	8	S	1346.0	1346.0	1.0	48.0			QL=5 ST=3 TYP=3
	1415	SVTO	8	S	1346.0	1346.0	1.0	31.0			QL=5 ST=2 TYP=3
	8800	SVTO	8	S	1346.0	1346.0	1.0	27.0			QL=5 ST=2 TYP=3
	930	BORD	45	C	1346.0	1346.1	3.0	24.0	6.0		
	3000	POTS	29	PBI	1346.0	1346.7	12.0	46.0			
	2800	OTTA	3	S	1346.0	1346.8	6.7	48.3	10.8		
	2800	OTTA	21	GRF	1346.0	1413.5	71.0	5.3	2.6		
	15000	KISV	2	S/F	1352.4	1352.7	.5	24.0			
	1470	POTS	4	S/F	1411.4	1413.3	3.8	7.0			
	930	BORD	46	C	1412.0	1413.7	2.6	68.0	7.0		
	3000	POTS	4	S/F	1412.1	1412.5	2.9	5.0			
	2800	OTTA	20	GRF	1520.0	1558.0	91.0	2.1	1.9		
	33	UPIC	45	C	1600.3	1600.3	2.0				
	29	UPIC	45	C	1600.3	1600.6	1.8				
	2800	OTTA	1	S	1656.3	1656.8	2.0	2.0	1.0		
	2800	OTTA	22	GRF	1744.0	1929.0	124.0	5.1	2.6		
	2700	PENT	23	GRF	2029.0	0100.0	326.0	7.9	4.0		
	500	HIRA	42	SER	2054.7	2054.7	4.0	34.0			0
	2800	OTTA	42	SER	2055.0	2055.2	1.2	6.1	2.8		
	1000	TYKW	45	C	2055.0E	2058.2	5.0D	28.0	5.0D		
	2800	OTTA	42	SER	2055.0	2125.3	31.2	29.4	3.3		
	610	PALE	46	C	2057.0	2057.0	1.0	84.0			QL=5 ST=2 TYP=5
	610	SGMR	46	C	2057.0	2058.0	2.0	68.0			QL=5 ST=2 TYP=5

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Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10^{-22} W/m^2 Hz)	Flux Density Mean (10^{-22} W/m^2 Hz)	Int	Remarks
23	2695	SGMR	8	S	2057.0	2058.0	1.0	28.0			QL=5 ST=2 TYP=3
	1415	PALE	8	S	2057.0	2058.0	1.0	27.0			QL=5 ST=2 TYP=3
	2695	PALE	8	S	2057.0	2058.0	1.0	28.0			QL=5 ST=2 TYP=3
	2000	TYKW	45	C	2057.0E	2058.1	5.0D	23.0	4.0D		
	3750	TYKW	45	C	2057.0E	2058.1	3.0D	6.0	2.0D		
	2800	OTTA			2057.5	2057.9	2.8	24.9	7.3		
	1415	SGMR	8	S	2058.0	2058.0	1.0	19.0			QL=5 ST=2 TYP=3
	1000	TYKW	5	S	2108.4E	2108.9	1.0D	2.0	.7		
	3750	TYKW	5	S	2108.5	2108.9	1.0	3.0	1.0		
	2800	OTTA			2108.5	2109.0	1.7	8.5	2.5		
	2000	TYKW	45	C	2108.5	2109.0	1.0	14.0	4.0		
	1000	TYKW	45	C	2117.0	2117.6	4.0	3.0	1.0		
	500	HIRA	42	SER	2121.0	2122.8	4.0	320.0			WR
	2000	TYKW	45	C	2122.7	2123.3	1.5	27.0	4.0		
	1000	TYKW	45	C	2122.7	2125.2	9.0	19.0	1.5		
	610	PALE	46	C	2123.0	2123.0	2.0	430.0			QL=5 ST=2 TYP=5
	2695	SGMR	4	S/F	2123.0	2123.0	3.0	28.0			QL=1 ST=3 TYP=3
	610	SGMR	46	C	2123.0	2123.0	3.0	340.0			QL=1 ST=3 TYP=5
	1415	PALE	8	S	2123.0	2123.0	2.0	33.0			QL=5 ST=2 TYP=3
	2695	PALE	8	S	2123.0	2123.0	2.0	33.0			QL=5 ST=2 TYP=3
	1415	SGMR	4	S/F	2123.0	2123.0	3.0	20.0			QL=1 ST=3 TYP=3
	3750	TYKW	5	S	2123.0	2123.3	1.5	4.0	1.0		
	2800	OTTA			2123.2	2123.3	1.7	25.2	6.3		
	2000	TYKW	30	PBI	2124.2		6.0	1.0	.5		
	3750	TYKW	5	S	2124.5	2125.4	1.5	3.0	1.0		
	2000	TYKW	5	S	2124.7	2125.3	1.5	12.0	3.0		
	2800	OTTA			2125.0	2125.3	1.3	29.4	5.9		
	245	SGMR	46	C	2133.0	2133.0	1.0	150.0			QL=5 ST=2 TYP=5
	245	PALE	46	C	2133.0	2133.0	1.0	130.0			QL=5 ST=2 TYP=5
	2000	TYKW	21	GRF	2300.0	2318.0	40.0	1.5	.7		
	3750	TYKW	21	GRF	2300.0	2320.0	45.0	3.0	1.5		
	9400	TYKW	20	GRF	2300.0	2320.0	60.0	2.0	1.0		
	3750	TYKW	45	C	2306.0	2307.2	5.0	2.0	.5		
	2000	TYKW	5	S	2306.0	2307.3	8.0	1.5	.5		
24	200	HIRA	43	NS	0300.0	0349.0	98.0	15.0	4.0		WL
	260	ONDR	44	NS	0820.0E	1021.5	473.0D	43.0			
	245	SGMR	43	NS	0950.0	1216.0	840.0	98.0			QL=5 ST=2 TYP=1
	410	SGMR	43	NS	0950.0	1300.0	840.0	36.0			QL=5 ST=2 TYP=1
	610	SGMR	43	NS	0950.0	1300.0	840.0	20.0			QL=5 ST=2 TYP=1
	204	IZMI	43	NS	1000.0		120.0	20.0			
	204	IZMI	43	NS	1000.0		12.0	20.0			
	245	SVTO	43	NS	1000.0	1211.0	470.0D	77.0			QL=1 ST=3 TYP=1
	410	SVTO	43	NS	1000.0	1310.0	470.0D	30.0			QL=1 ST=3 TYP=1
	234	POTS	43	NS	1001.0	1208.0	629.0	60.0			
	127	TORN	43	NS	1003.0		337.0D		58.0		V=1
	536	ONDR	43	NS	1020.0	1216.0	223.0D	17.0			
	200	HIRA	44	NS	1935.0E	2150.0	330.0D	8.0	3.0		WR
	245	LEAR	44	NS	2318.0E	0449.0		26.0			QL=5 ST=1 TYP=1
	9400	TYKW	21	GRF	0025.0	0035.0	75.0	4.0	2.0		
	3750	TYKW	45	C	0027.0	0033.6	20.0	6.0	3.0		
	2000	TYKW	5	S	0030.0	0042.0	15.0	3.0	1.5		
	2000	TYKW	30	PBI	0045.0		45.0	1.5	.7		
	3750	TYKW	30	PBI	0047.0		60.0	3.0	1.5		
	9400	TYKW	20	GRF	0050.0	0101.0	40.0	6.0	3.0		
	3750	TYKW	20	GRF	0052.0	0059.0	30.0	3.0	1.5		
	2000	TYKW	20	GRF	0052.0	0102.0	30.0	1.5	.7		
	17000	NOBE	20	GRF	0052.0	0105.0	30.0	7.0			
	2000	TYKW	31	ABS	0130.0	0220.0	140.0	-2.0	-1.0		
	3750	TYKW	31	ABS	0147.0	0220.0	90.0	-4.0	-2.0		
	9400	TYKW	32	ABS	0148.0	0210.0	70.0	-4.0	-2.0		
	950	GORK	1	S	0424.4	0425.1	2.5	7.0			
	2950	GORK	2	S/F	0424.4	0425.7	1.7	3.1			
	2000	TYKW	45	C	0424.5	0425.2	2.5	4.0	1.0		
	3750	TYKW	5	S	0424.5	0425.2	2.0	3.0	1.0		
	650	GORK	4	S/F	0424.6	0425.6	15.0	118.0			
	1000	TYKW	5	S	0424.7	0425.2	2.0	6.0	1.5		
	9100	GORK	1	S	0424.8	0425.4	1.2	3.6	1.5		
	9300	KISV	1	S	0425.0	0425.2	1.5	4.0			
	3750	TYKW	20	GRF	0509.0	0513.0	30.0	1.0	.5		
	2000	TYKW	20	GRF	0510.0	0520.0	35.0	1.0	.5		

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Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10^{-22} W/m^2 Hz)	Flux Density Mean (10^{-22} W/m^2 Hz)	Int	Remarks
24	3100	CRIM	1	S	0524.0	0526.0	5.0	3.0	1.0		
	3100	CRIM	4	S/F	0624.0	0626.0	5.0	3.0			TYP=3
	5900	KISV			0814.4	0815.9		7.0			
	5900	KISV	21	GRF	0814.4	0826.2	64.0	8.0			
	3750	TYKW	20	GRF	0815.0	0825.0	45.0	3.0	1.5		
	5900	KISV	2	S/F	0918.0	0920.3	5.0	6.0			
	5900	KISV	28	PRE	0932.7	0955.2	22.5	7.0			
	3000	POTS	29	PBI	0953.7	0958.6	109.0	111.0			
	2950	GORK	46	C	0954.5	0958.5	12.5	153.0			
	2950	GORK			0954.5	1004.0		87.0			
	4995	SVTO	46	C	0955.0E	0958.0	21.0D	200.0			QL=5 ST=3 TYP=5
	5900	KISV	4	S/F	0955.0	0958.0	7.0	257.0			QL= ST= TYP=3
	9300	KISV	4	S/F	0955.0	0959.0	6.0	241.0			QL= ST= TYP=3
	9300	KISV			0955.1	0957.5		220.0			
	9300	KISV	45	C	0955.1	0958.7	6.0	241.0			
	5900	KISV			0955.2	0957.4		235.0			
	5900	KISV	45	C	0955.2	0958.2	6.5	257.0			
	9500	POTS	29	PBI	0955.5	0958.6	68.0	186.0			
	9100	GORK	46	C	0955.6	0957.4	11.6	215.0			
	9100	GORK			0955.6	0958.7		244.0			
	1470	POTS	29	PBI	0955.9	0959.6	97.0	41.0			
	8800	SVTO	46	C	0956.0E	0958.0	12.0D	230.0			QL=5 ST=3 TYP=5
	3013	IZMI	5	S	0956.0	0959.0	14.0	115.0	65.0		
	15000	KISV	45	C	0956.7	0958.8	4.5	132.0			
	15400	SVTO	46	C	0957.0	0958.0	12.0	140.0			QL=5 ST=3 TYP=5
	2695	SVTO	46	C	0957.0	0958.0	15.0	130.0			QL=5 ST=3 TYP=5
	1415	SVTO	20	GRF	0957.0	0959.0	10.0	54.0			QL=5 ST=3 TYP=2
	930	BORD	46	C	0958.0	1003.0	19.0	312.0	12.0		
	950	GORK	46	C	0958.1	1001.7	13.7	129.0			
	950	GORK			0958.1	1002.2		274.0			
	950	GORK			0958.1	1002.7		300.0			
	950	GORK			0958.1	1003.7		177.0			
	810	KRAK	4	S/F	0958.2	1005.0	13.0	16.0	8.0		
	810	KRAK			0958.2	1006.0		16.0			
	808	ONDR	46	C	0958.5	1002.7	9.0				
	650	GORK	46	C	0958.6	1002.8	17.8	39.0			
	650	GORK			0958.6	1003.8		70.0			
	650	GORK			0958.6	1009.0		34.0			
	536	ONDR	46	C	1000.0	1003.8	16.5	26.0			
	15000	KISV	29	PBI	1001.4	1001.4	55.0	35.0			
	5900	KISV	29	PBI	1001.7	1002.0	63.0	78.0			
	9300	KISV	29	PBI	1001.8	1001.8	56.0	60.0			
	9300	KISV	2	S/F	1002.5	1004.1	2.5	16.0			
	15000	KISV	1	S	1002.6	1004.6	3.5	12.0			
	5900	KISV	4	S/F	1002.8	1004.1	2.5	30.0			
	2950	GORK	29	PBI	1007.0	1007.0	84.0	32.0			
	9100	GORK	29	PBI	1007.2	1007.2	73.0	32.0			
	810	KRAK	40	F	1012.7	1015.0	9.0	3.0	1.0		
	29	UPIC	42	SER	1013.0U	1037.8	56.8U				
	33	UPIC	42	SER	1027.7	1108.9	56.7				
	3100	CRIM	3	S	1056.0	1058.8	14.0	95.0	32.0		
	2800	OTTA	22	GRF	1100.0E	1111.0	328.0D	6.0	4.0		
	3100	CRIM	29	PBI	1110.0	1110.0	40.0	13.0	4.0		
	9500	POTS	41	F	1243.2	1243.6	3.2	118.0			
	9500	POTS	41	F	1311.5	1312.9	1.9	37.0			
	2800	OTTA	22	GRF	1716.0	1753.0	164.0	6.2	3.1		
	33	UPIC	46	C	1727.1	1729.4	18.9				
	29	UPIC	46	C	1728.0	1730.4	18.6				
	3750	TYKW	21	GRF	2238.0	2240.0	40.0	1.0	.5		
	3750	TYKW	5	S	2241.0	2242.1	4.0	1.5	.5		
	2000	TYKW	5	S	2241.0	2242.5	4.0	1.0	.3		
25	245	SVTO	43	NS	0401.0	1007.0	828.0D	73.0			QL=1 ST=2 TYP=1
	245	LEAR	43	NS	2318.0	0449.0	624.0D	26.0			QL=5 ST=2 TYP=1
	3750	TYKW	32	ABS	0007.0	0025.0	35.0	-1.5	- .7		
	3750	TYKW	5	S	0043.0	0043.6	2.0	4.0	1.0		
	3750	TYKW	32	ABS	0150.0	0225.0	65.0	-1.0	- .5		
	8800	PALE			0220.0E	0223.0	4.0D	110.0			QL=1 ST=2 TYP=8
	3750	TYKW	20	GRF	0617.0	0626.0	45.0	4.0	2.0		
	2000	TYKW	20	GRF	0619.0	0625.0	45.0	4.0	1.5		
	2950	GORK	20	GRF	0619.7	0625.5	40.0	4.8			

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JULY 1987

Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10^{-22} W/m^2 Hz)	Flux Density Mean	Int	Remarks
25	9400	TYKW	20	GRF	0620.0	0640.0	90.0	4.0	2.0		
	3100	CRIM	20	GRF	0719.0	0726.0	36.0	5.0	2.0		
	930	BORD	8	S	0837.7	0837.8	.3	39.0	2.0		
	3100	CRIM	1	S	1151.0	1153.0	6.0	5.0	2.0		
	2800	OTTA	20	GRF	1508.0	1529.0	85.0	2.5	1.2		
	2800	OTTA	20	GRF	1934.0	1943.0	70.0	5.3	1.8		
	2800	OTTA	20	GRF	2107.0	2111.7	53.0	3.6	1.6		
	2000	TYKW	20	GRF	2108.0	2112.0	50.0	1.0	.5		
	3750	TYKW	20	GRF	2108.0	2112.0	50.0	4.0	2.0		
	9400	TYKW	20	GRF	2110.0	2115.0	30.0	3.0	1.5		
	3750	TYKW	20	GRF	2210.0	2223.0	45.0	1.5	.7		
26	245	SVTO	43	NS	0930.0	1156.0	499.0D	100.0			QL=1 ST=2 TYP=1
	3750	TYKW	32	ABS	0105.0	0120.0	50.0	-1.0	- .5		
	3750	TYKW	5	S	0257.0	0258.1	3.0	1.5	.5		
	9400	TYKW	5	S	0327.5	0328.2	2.5	24.0	7.0		
	2000	TYKW	5	S	0327.8	0328.3	2.2	5.0	2.0		
	3750	TYKW	5	S	0327.8	0328.3	2.2	16.0	6.0		
	8800	PALE	4	S/F	0328.0	0328.0		23.0			QL=5 ST=2 TYP=3
	8800	LEAR	8	S	0328.0	0328.0	1.0	33.0			QL=5 ST=2 TYP=3
	15400	PALE	4	S/F	0328.0	0328.0		13.0			QL=5 ST=2 TYP=3
	2695	PALE	8	S	0328.0	0328.0	2.0	18.0			QL=5 ST=2 TYP=3
	4995	LEAR	4	S/F	0328.0	0328.0		20.0			QL=5 ST=2 TYP=3
	2695	LEAR	4	S/F	0328.0	0328.0		12.0			QL=5 ST=2 TYP=3
	4995	PALE	8	S	0328.0	0328.0	1.0	30.0			QL=5 ST=2 TYP=3
	15400	LEAR	4	S/F	0328.0	0328.0		13.0			QL=3 ST=2 TYP=3
	9500	HIRA	8	S	0328.0	0328.0	1.0	9.0			QL= ST= TYP=3
	3750	TYKW	29	PBI	0330.0		10.0	1.5	.7		
	9400	TYKW	29	PBI	0330.0		15.0	3.0	1.5		
	2000	TYKW	29	PBI	0330.0		10.0	1.0	.5		
	204	IZMI	5	S	0621.0	0621.5	.6	25.0	15.0		
	3100	CRIM	4	S/F	0627.0	0631.0		2.0			QL= ST= TYP=3
	127	TORN	42	SER	0851.4	0857.8	8.0	70.0			
	204	IZMI	5	S	0952.2	0952.5	1.0	50.0	25.0		
	9400	HUAN	1	S	1245.9	1247.8	4.8	7.1	2.5		
	9400	HUAN	1	S	1254.3	1255.8	5.7	4.2	1.8		
	2800	OTTA	20	GRF	1410.0E	1524.0	324.0D	4.1	2.0		
	9400	HUAN	1	S	1644.2	1646.0	4.9	8.5	3.3		
	3750	TYKW	20	GRF	2232.0	2247.0	40.0	1.0	.5		
27	260	ONDR	44	NS	0600.0E	1109.5	484.0D	9.0			
	127	TORN	43	NS	0744.0		420.0		2.0		V=1, DISTURBED
	2000	TYKW	32	ABS	0000.0	0020.0	100.0	-1.0	- .5		
	9400	TYKW	32	ABS	0000.0	0030.0	105.0	-2.0	-1.0		
	3750	TYKW	32	ABS	0003.0	0020.0	100.0	-2.0	-1.0		
	8800	LEAR	4	S/F	0217.0	0218.0	3.0	31.0			QL=5 ST=2 TYP=3
	3750	TYKW	45	C	0217.0	0218.8	4.0	12.0	4.0		
	9400	TYKW	5	S	0217.0	0218.8	4.0	20.0	9.0		
	2000	TYKW	5	S	0217.5	0218.8	2.5	2.0	1.0		
	4995	PALE	8	S	0218.0	0218.0	1.0	17.0			QL=5 ST=2 TYP=3
	8800	PALE	8	S	0218.0	0218.0	1.0	26.0			QL=5 ST=2 TYP=3
	2000	TYKW	29	PBI	0220.0		15.0	1.0	.5		
	9400	TYKW	29	PBI	0221.0		15.0	4.0	2.0		
	3750	TYKW	29	PBI	0221.0		15.0	2.0	1.0		
	3750	TYKW	5	S	0308.0	0308.9	2.0	3.5	1.5		
	3750	TYKW	30	PBI	0310.0		35.0	1.5	.7		
	2000	TYKW	20	GRF	0310.0	0318.0	40.0	1.0	.5		
	9400	TYKW	45	C	0317.0	0318.0	3.0	7.0	2.0		
	3750	TYKW	5	S	0317.0	0318.3	4.0	4.0	1.0		
	9100	GORK	1	S	0317.5	0318.1	1.4	8.0	3.0		
	245	LEAR	4	S/F	0420.0	0420.0		44.0			QL=5 ST=2 TYP=3
	5900	KISV	20	GRF	0437.5	0452.2	29.0	3.0			
	3750	TYKW	5	S	0440.0	0449.0	20.0	1.0	.5		
	9400	TYKW	32	ABS	0500.0	0520.0	70.0	-3.0	-1.5		
	3750	TYKW	31	ABS	0500.0	0520.0	70.0	-2.0	-1.0		
	2000	TYKW	32	ABS	0500.0	0521.0	80.0	-1.5	- .7		
	3750	TYKW	32	ABS	0625.0	0640.0	60.0	-1.5	- .7		
	2800	OTTA	20	GRF	1240.0E		238.0D	8.9	4.4		
	9400	HUAN	20	GRF	1359.8	1408.6	19.8	4.2	2.0		
	9400	HUAN	1	S	1453.0	1453.8	2.2	5.0	2.3		
	9400	HUAN	1	S	1557.2	1559.7	4.4	8.5	1.9		

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

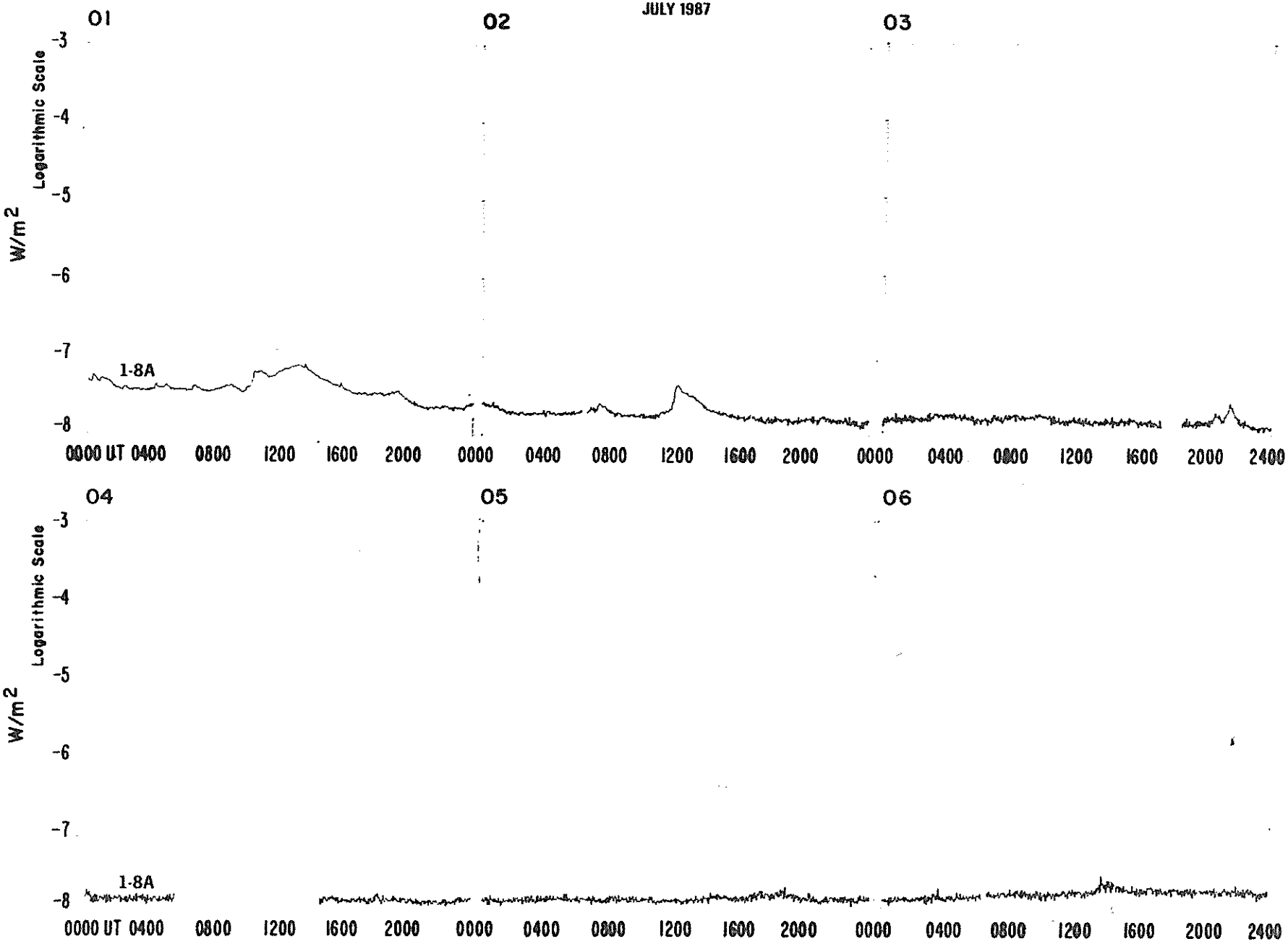
JULY 1987

Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10^{-22} W/m^2 Hz)	Flux Density Mean (10^{-22} W/m^2 Hz)	Int	Remarks
27	9400	HUAN	1	S	1608.5	1610.0	3.1	4.2	2.3		
	9400	HUAN	1	S	1615.3	1616.5	2.9	5.7	3.0		
	9400	HUAN	1	S	1632.9	1634.7	3.2	6.4	1.4		
	2800	OTTA	24	R	1649.0	1700.0	11.0	1.5	.7		
	245	SGMR	4	S/F	1700.0E	1703.0	3.0D	34.0			QL=5 ST=2 TYP=3
	2695	PALE	46	C	1810.0	1811.0	4.0	220.0			QL=5 ST=2 TYP=5
	2695	SGMR	46	C	1810.0	1811.0	5.0	260.0			QL=5 ST=2 TYP=5
	4995	PALE	46	C	1810.0	1811.0	4.0	370.0			QL=5 ST=2 TYP=5
	4995	SGMR	45	C	1810.0	1811.0	13.0	380.0			QL=5 ST=2 TYP=5
	8800	PALE	45	C	1810.0	1811.0	3.0	440.0			QL=5 ST=2 TYP=5
	8800	SGMR	45	C	1810.0	1811.0	4.0	440.0			QL=5 ST=2 TYP=5
	9400	HUAN	45	C	1810.2	1811.6	6.1	362.8	67.4		
	2800	OTTA	3	S	1810.2	1811.8	8.0	235.6	70.7		
	15400	SGMR	46	C	1811.0	1811.0	12.0	190.0			QL=5 ST=2 TYP=5
	1415	SGMR	46	C	1811.0	1811.0	2.0	56.0			QL=5 ST=2 TYP=5
	15400	PALE	46	C	1811.0	1811.0	1.0	170.0			QL=5 ST=2 TYP=5
	1415	PALE	46	C	1811.0	1811.0	349.0	57.0			QL=5 ST=1 TYP=5
	245	SGMR	46	C	1812.0	1812.0	3.0	150.0			QL=5 ST=2 TYP=5
	9400	HUAN	29	PBI	1816.3	1816.3	23.4	28.3	22.8		
	2800	OTTA	30	PBI	1818.2	1818.2	74.0	6.8	3.4		
	2800	OTTA	1	S	1824.2	1826.0	4.5	3.4	1.7		
	2800	OTTA	8	S	1825.0	1825.2	.3	2.9	1.4		
	2800	OTTA	24	R	2115.3	2124.7	9.4	1.9	1.1		
	2000	TYKW	20	GRF	2118.0	2120.0	30.0	1.0	.5		
	3750	TYKW	20	GRF	2118.0	2125.0	40.0	2.0	1.0		
	2800	OTTA	24	R	2202.0	2215.0	13.0	1.6	.9		
	3750	TYKW	20	GRF	2204.0	2210.0	60.0	1.5	.7		
	2000	TYKW	20	GRF	2204.0	2235.0	95.0	1.5	.7		
	3750	TYKW	20	GRF	2312.0	2319.0	25.0	1.0	.5		
	3750	TYKW	20	GRF	2345.0	2348.0	65.0	1.0	.5		
28	260	ONDR	44	NS	0549.0E	0700.0	492.0D	13.0			
	9400	TYKW	5	S	0032.0	0033.3	4.0	1.5	.5		
	9400	TYKW	5	S	0032.0	0033.3	4.0	3.0	1.0		
	9400	TYKW	5	S	0235.0	0238.0	18.0	2.0	.7		
	9400	TYKW	5	S	0235.0	0238.0	18.0	2.0	1.0		
	9400	TYKW	20	GRF	0355.0	0422.0	100.0	2.0	1.0		
	9400	TYKW	20	GRF	0400.0	0430.0	90.0	2.0	1.0		
	5900	KISV	1	S	0426.4	0428.0	3.5	3.0			
	9300	KISV	1	S	0427.6	0428.2	1.5	3.0			
	245	PALE	4	S/F	0447.0	0447.0		29.0			QL=5 ST=2 TYP=3
	245	LEAR	4	S/F	0447.0	0447.0		42.0			QL=5 ST=2 TYP=3
	245	SVTO	46	C	0447.0	0447.0	1.0	60.0			QL=5 ST=2 TYP=5
	536	ONDR	42	SER	1051.0	1052.5	5.3	9.0			
	2800	OTTA	22	GRF	1100.0E	1150.0	310.0D	4.7	2.8		
	2695	SGMR	8	S	1258.0	1259.0	2.0	48.0			QL=5 ST=2 TYP=3
	9400	HUAN	22	GRF	1518.6	1530.7	41.4	9.2	4.6		
29	127	TORN	43	NS	0700.0		300.0U		1.0		V=1, DISTURBED
	260	ONDR	43	NS	0830.0	0840.0	210.0	5.0			
	245	SGMR	43	NS	1443.0		557.0				QL=5 ST=3 TYP=1
	1415	SGMR	43	NS	1443.0		557.0				QL=5 ST=3 TYP=1
	9300	KISV	26	FAL	0333.5E	0333.5	101.5D	21.0			
	2000	TYKW	5	S	0741.0	0743.0	16.0	1.0	.5		
	3750	TYKW	5	S	0742.5	0743.0	10.0	3.0	1.0		
	2800	OTTA	1	S	2137.0	2137.2	1.2	2.5	1.2		
	3750	TYKW	45	C	2137.0	2137.5	11.5	2.0	.5		
30	260	ONDR	46	C	0625.0	0626.5	2.5	6.0			
	9400	HUAN	21	GRF	1235.7	1256.3	56.8	6.0	2.8		
	9400	HUAN	1	S	1300.6	1302.2	3.9	13.5	6.4		
	9400	HUAN	1	S	1308.4	1310.8	4.2	3.0	1.6		
31	2000	TYKW	5	S	0345.0	0346.6	3.0	3.0	1.5		
	3750	TYKW	20	GRF	0345.0	0348.0	35.0	1.5	.7		
	9400	TYKW	5	S	0345.0	0349.0	20.0	2.0	1.0		
	2000	TYKW	29	PBI	0348.0		15.0	1.0	.5		
	808	ONDR	4	S/F	0553.5	0553.8	.5				
	430	KRAK	4	S/F	0954.0	0955.8	3.0	29.0	7.0		
	260	ONDR	40	F	1039.5	1039.7	2.0	3.0			
	808	ONDR	1	S	1335.5	1335.5	.5				

22 Jul 87

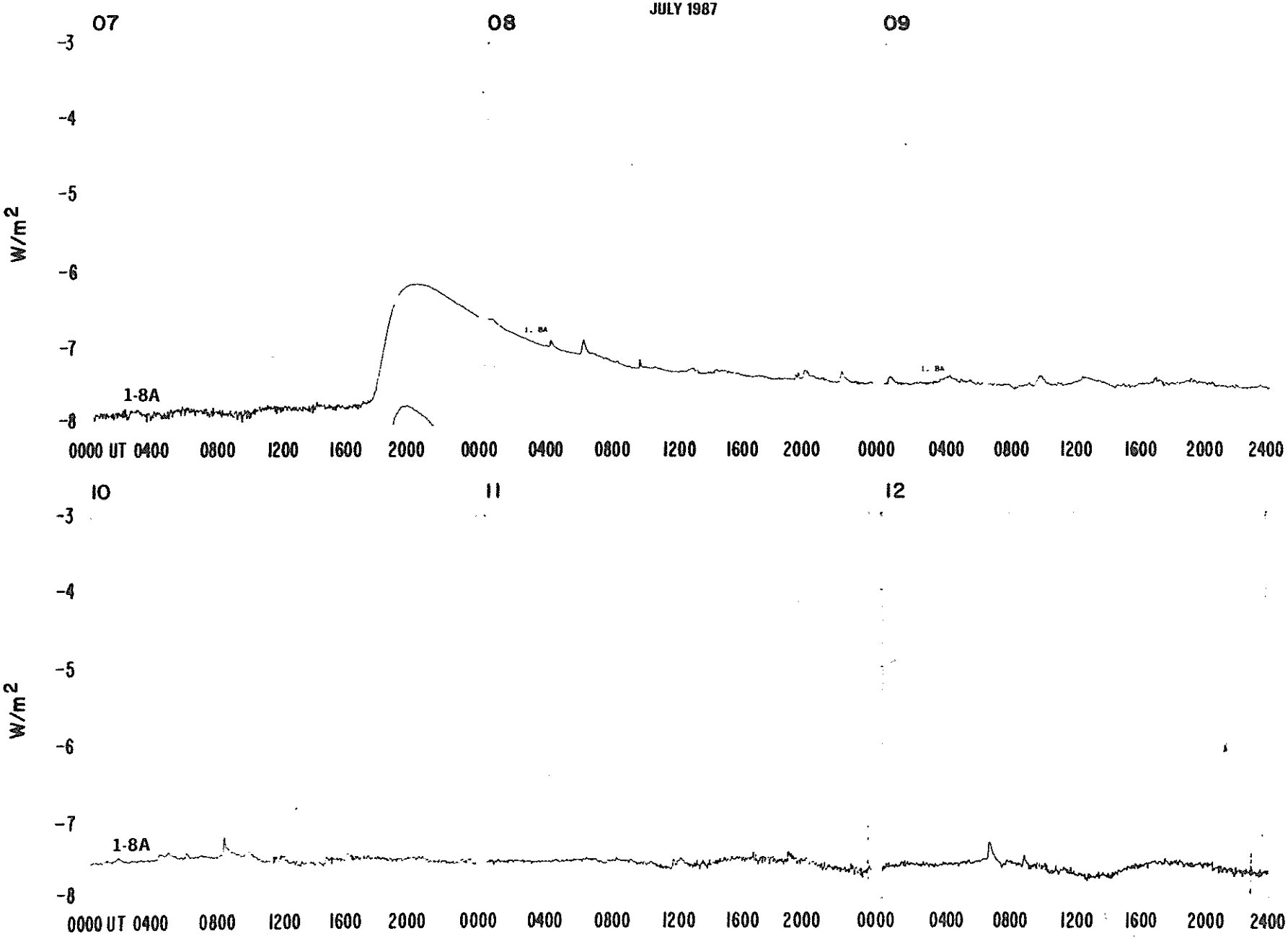
GOES 6 X-RAYS

JULY 1987



GOES 6 X-RAYS

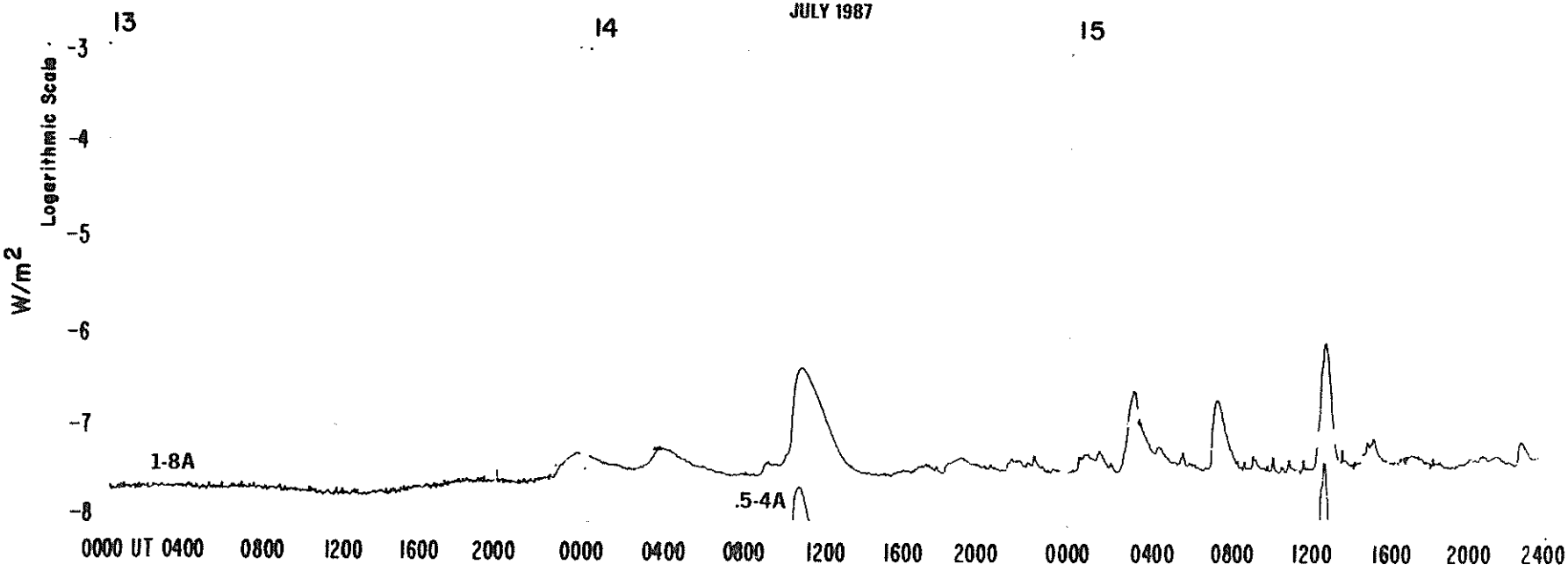
JULY 1987

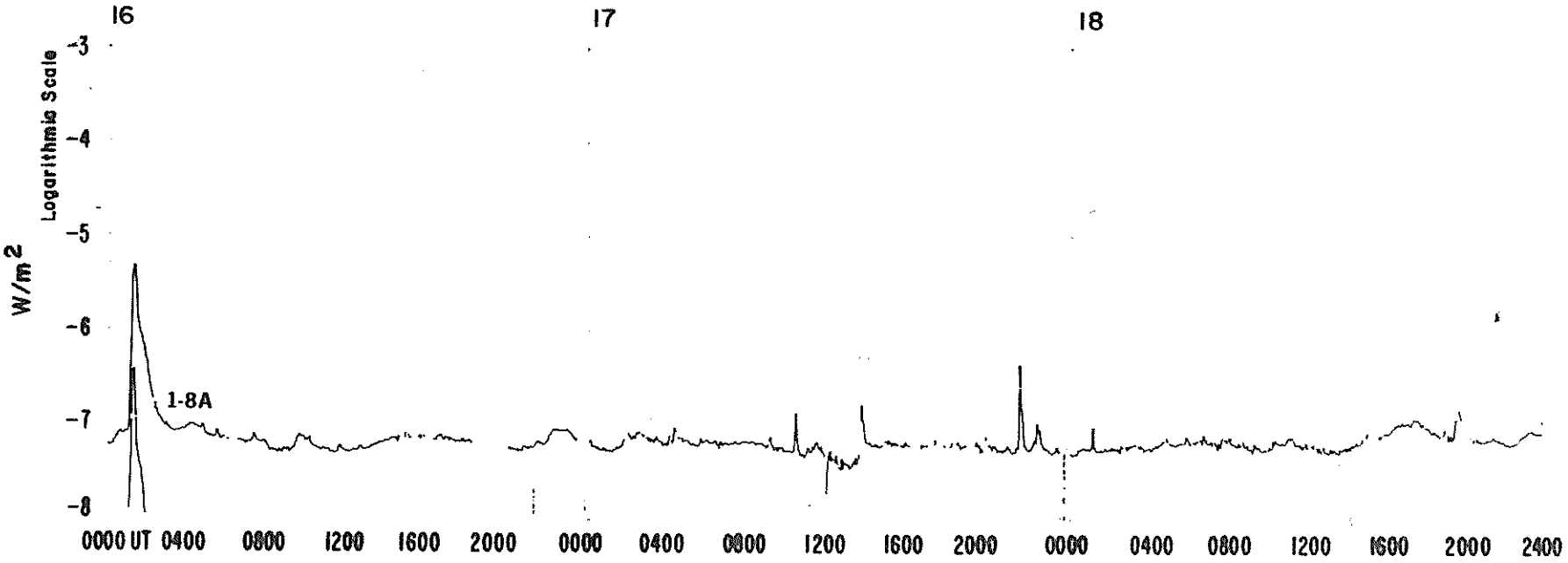


23 Jul 87

GOES 6 X-RAYS

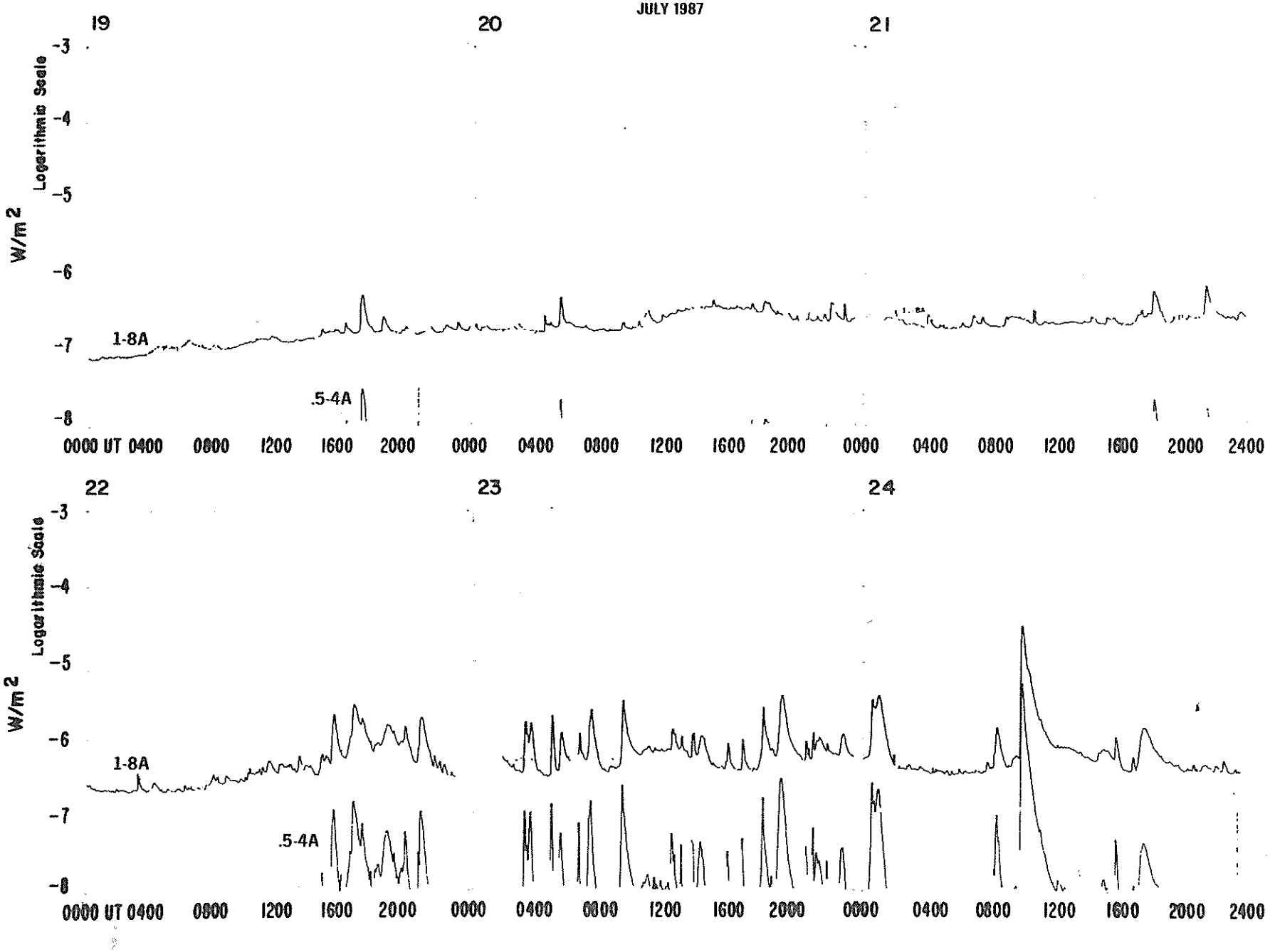
JULY 1987





GOES 6 X-RAYS

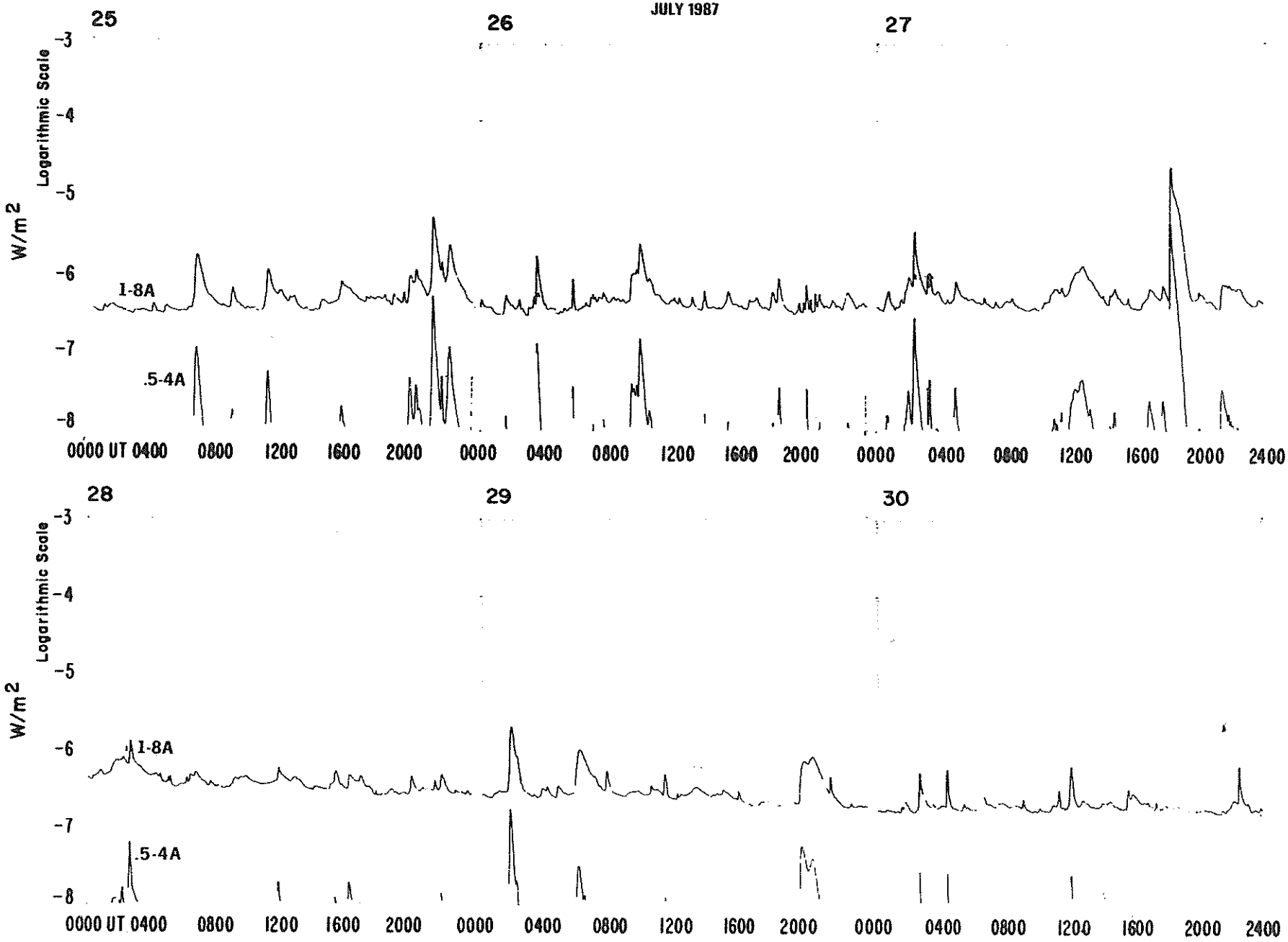
JULY 1987



25 Jul 87

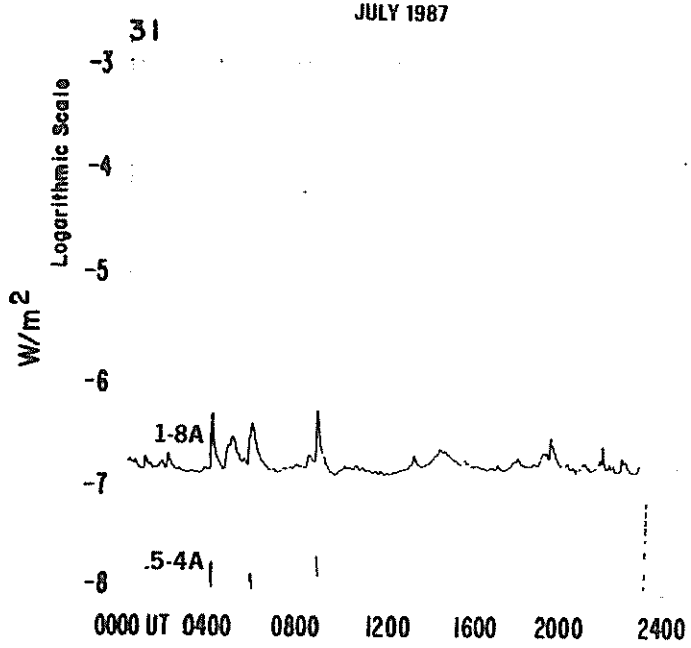
GOES 6 X-RAYS

JULY 1987



GOES 6 X-RAYS

JULY 1987



27 Jul 87

GOES S O L A R X-RAY F L A R E S

Preliminary Listing

July 1987

Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	Imp Opt	Xray
07	1730	2015	2300	N40	E90			B6.9
14	1020	1050	1131					B4.4
15	0304	0322	0332					B2.8
15	0719	0736	0751					B2.2
15	1247	1306	1317					B9.2
16	0104	0119	0127					C4.4
17	1029	1034	1038					B1.3
17	1351	1356	1401					B1.6
17	2157	2157	2159	N22	E86	4825	SF	B4.3
17	2250E	2250	2256	N26	W82	4823	SF	B1.0
19	1704	1716	1724					B5.1
20	0423	0426	0429					B3.0
20	0520	0527	0532					B5.0
20	2227	2233	2247					B4.1
20	2318	2321	2325					B4.0
21	1035	1038	1040					B3.0
21	1805	1814	1827					B5.4
21	2124	2132	2140					B5.8
22	0311	0315	0320					B3.2
22	1318	1324	1330					B5.9
22	1518	1526	1559	S29	W13	4826	SN	C2.1
22	1620	1651	1708	S29	W13	4826	SN	C2.8
22	2000	2001	2006	S28	W16	4826	SF	C1.4
22	2049	2059	2140D	S29	W15	4826	SF	C1.9
22	2149	2153	2158					B5.4
23	0310	0317	0327					C1.6
23	0331	0337	0343					C1.5
23	0454	0455	0516	S30	W20	4826	SN	C1.8
23	0526	0529	0543	S21	E51	4827	SN	C1.1
23	0638	0642	0644					C1.2
23	0715	0715	0737	S29	W21	4826	SN	C2.3
23	0920	0922	0947	S31	W22	4826	SF	C3.1
23	1228	1233	1245					C1.3
23	1305	1309	1311					C1.1
23	1350	1350	1357	S31	W23	4826	SF	C1.1
23	1600	1601	1612	S19	E04	4829	SF	B8.5
23	1657	1657	1702	S30	W25	4826	SF	B9.8
23	1813	1815	1845	S29	W28	4826	SN	C2.6
23	1911	1923	1945	S29	W28	4826	SN	C3.7
23	2056	2100	2104					C1.0
23	2121	2127	2129					C1.2
24	0022	0035	0055D	S28	W28	4826	SF	C3.7
24	0817	0819	0837	S29	W35	4826	SN	C1.4
24	0953	1004	1039			4826		M3.0
24	1551	1556	1620	N31	E69	4831	SN	C1.0
25	0623	0630	0649	S28	W52	4826	SF	C1.6
25	1145	1147	1158	S20	W17	4827	SF	C1.1
25	1943	1949	1959					B9.4
25	2107	2122	2153	S27	W58	4826	SN	C5.5
25	2218	2219	2249	S18	W28	4829	SF	C2.4
26	0327	0331	0338					C1.8
26	0542	0545	0548					B9.4
26	0649	0659	0711					B5.3
26	0921	0954	1014	S30	W61	4826	SN	C2.6
26	1350	1355	1402	S29	W67	4826	SN	B6.6
26	1806	1809	1836	S18	W39	4829	SF	B9.4
26	2003	2006	2008					B4.8
26	2011	2016	2020					B8.0
26	2045	2049	2053					B6.0
27	0224E	0224	0224D	S27	W71	4826	SF	C3.8
27	0307	0311	0313			4827		C1.1
27	0317	0320	0323					C1.1
27	1811	1812	1829	S26	W72	4826	SF	M2.6
27	2119	2130	2241					B7.9
28	0235	0240	0247					C1.3
28	1614	1621	1642					B4.8
29	0139	0151	0201					C2.0
29	0742	0746	0752					B5.4
29	1118	1123	1129					B5.0
29	2021	2022	2050	N17	W79	4825	SF	B7.9
29	2136	2140	2143					B4.4
30	0234	0238	0243					B5.6
30	0417	0418	0423	S29	W34	4827	SF	B6.2
30	0627	0627	0632	S23	W39	4827	SF	B3.1
30	1159	1201	1221	S21	W39	4827	SN	B6.2
30	1531	1538	1542					B2.6
30	2226	2231	2234					B6.5
31	0347	0347	0356	N30	W10	4831	SN	B4.9
31	0525	0537	0546					B4.0
31	0828	0833	0838					B5.3
31	1831	1900	1912	N15	W01	4834	SF	B2.9

Preliminary GOES Satellite Data
Daily Average X-ray Background

August 1986 - July 1987

Day	1986 Aug	Sep	Oct	Nov	Dec	1987 Jan	Feb	Mar	Apr	May	Jun	Jul
1	<B0.1	<B0.1	<A1.0	B2.7	<A1.0	<A1.3	<A1.0	<A1.0	A1.1	A4.9	A4.8	---
2	<B0.1	<B0.1	<A1.0	A9.0	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	A5.0	A3.2	A1.7
3	B0.3	<B0.1	<A1.0	A5.1	<A1.0	<A1.0	<A1.0	<A1.0	<A1.0	A8.8	A2.7	A1.4
4	B0.2	<B0.1	<A1.0	A8.6	<A1.0	<A1.0	<A1.0	<A1.0	A2.2	A8.6	A2.7	A1.3
5	<B0.1	<B0.1	<A1.0	A6.1	<A1.0	<A1.0	<A1.0	<A1.0	A2.3	A8.1	A2.3	A1.2
6	<B0.1	<B0.1	A1.5	A7.0	<A1.0	<A1.0	<A1.0	A2.6	B2.7	A8.0	A2.0	A1.3
7	<B0.1	<B0.1	A2.2	A3.6	<A1.0	<A1.0	<A1.0	A4.1	---	A6.5	A1.9	A1.5
8	B0.4	<B0.1	A2.0	A2.5	<A1.0	<A1.0	<A1.0	A5.2	---	A5.9	A1.9	A5.0
9	B0.4	<B0.1	A2.4	A2.1	A1.6	<A1.0	<A1.0	A3.1	---	A5.3	A2.8	A3.5
10	<B0.1	<B0.1	A2.2	<A1.0	A1.6	<A1.0	<A1.0	A1.9	B2.2	A5.7	A6.3	A3.2
11	<B0.1	<B0.1	A1.8	<A1.0	<A1.0	<A1.0	<A1.0	A2.2	B1.9	A4.8	A8.5	A2.7
12	<B0.1	<B0.1	A4.3	A2.3	<A1.0	<A1.0	<A1.0	A3.0	B1.6	A4.9	A8.7	A1.9
13	<B0.1	<B0.1	B1.6	A6.2	<A1.0	<A1.0	<A1.0	A2.6	B1.4	A9.5	A8.8	A1.9
14	<B0.1	<B0.1	B2.5	A4.0	<A1.0	<A1.0	<A1.0	A5.3	B1.4	B1.8	A7.9	A3.3
15	<B0.1	B0.3	B1.5	A4.1	<A1.0	<A1.0	<A1.0	A1.9	B1.2	B2.0	A7.3	A4.3
16	<B0.1	B0.5	B4.0	A3.9	<A1.0	<A1.0	<A1.0	<A1.0	B2.2	B2.8	A7.1	A5.3
17	<B0.1	<B0.1	B3.7	A3.2	<A1.0	<A1.0	<A1.0	<A1.0	B2.6	B1.9	A8.9	A4.0
18	<B0.1	<B0.1	B2.5	A3.4	<A1.0	<A1.0	<A1.0	<A1.0	B2.9	B1.9	A8.6	A5.2
19	<B0.1	<B0.1	B3.8	A3.0	<A1.0	<A1.0	<A1.0	A1.0	B2.2	B2.0	A7.4	B1.1
20	<B0.1	<B0.1	B2.2	A3.3	<A1.0	<A1.0	<A1.0	A1.3	B1.5	B1.8	A6.4	B1.8
21	<B0.1	<B0.1	B1.5	A2.1	<A1.0	<A1.0	<A1.0	A1.5	A7.2	B2.1	A7.7	B2.0
22	<B0.1	<A1.0	B1.6	A2.3	<A1.0	A2.5	<A1.0	A1.4	A3.5	B2.4	B1.2	---
23	<B0.1	<A1.0	B2.1	A2.1	<A1.0	A1.3	<A1.0	A1.7	A2.1	B1.6	A9.7	B3.9
24	<B0.1	<A1.0	B2.1	A4.4	<A1.0	<A1.0	A1.7	A5.3	A2.2	B3.1	B1.1	B3.5
25	<B0.1	<A1.0	B1.7	A2.9	<A1.0	<A1.0	A2.3	A4.2	A1.8	B4.9	A9.5	B3.4
26	<B0.1	<A1.0	B1.9	A1.3	<A1.0	A1.7	A2.3	A3.8	A1.4	B3.6	A8.3	B3.6
27	<B0.1	<A1.0	B1.9	A1.2	<A1.0	<A1.0	A1.5	A3.2	A1.7	B2.3	A5.5	B3.7
28	<B0.1	<A1.0	B1.8	<A1.0	<A1.0	<A1.0	<A1.0	A2.2	A1.7	B2.3	A4.6	B3.2
29	<B0.1	<A1.0	B1.6	<A1.0	<A1.0	<A1.0		A1.2	A1.7	B1.4	A4.0	B2.2
30	<B0.1	<A1.0	B1.8	<A1.0	<A1.0	<A1.0		A1.2	A2.6	B1.4	A3.9	B1.6
31	<B0.1		B2.1		<A1.0	<A1.0		<A1.0		A6.7		B1.4

MASS EJECTIONS FROM THE SUN

JULY 1987

Sta	Day	Observed UT LStart	Max	End	Location RA°	R/R_o	Freq or Wavelength	Kind of Event
KHAR	Jul 01	0655 E		0704	D 360	0.45	H-alpha	S
KHAR	Jul 01	0705 E		0722	D 237	4.00	H-alpha	S
KHAR	Jul 08	0649 E		0702	D 238	0.70	H-alpha	S
KHAR	Jul 10	0905 E		0925	D 249	0.94	H-alpha	S
KHAR	Jul 10	1011 E		1055	249	0.94	H-alpha	S
KHAR	Jul 17	0805 E		0958	071	1.00	H-alpha	S
KHAR	Jul 17	1005		1025	071	1.00	H-alpha	S
KHAR	Jul 17	1035 E		1055	071	1.00	H-alpha	S
KHAR	Jul 20	0722 E		0733	112	1.00-1.05	H-alpha	S
KHAR	Jul 20	0742 E		0748	D 117	0.78	H-alpha	S
KHAR	Jul 20	0753 E		0836	D 067	0.76	H-alpha	S
KHAR	Jul 20	0817 E		0836	D 051	0.43	H-alpha	S
KHAR	Jul 21	0854 E		0917	D 115	1.00-1.05	H-alpha	S
KHAR	Jul 22	0520 E	0847 U	0908	D 120	1.00	H-alpha	A
KHAR	Jul 23	0607 E	0642 U	0918	D 121	1.00	H-alpha	A
KHAR	Jul 23	0757 E		0818	116	0.87	H-alpha	S
KHAR	Jul 24	0607 E	0643 U	0643	D 058	1.00	H-alpha	A
KHAR	Jul 24	1052 E		1107	D 229	0.76	H-alpha	S
SGMR	Jul 24	1727.0		1751.0			Meter	II
KHAR	Jul 25	0619 E	0905 U	0905	D 060	1.00	H-alpha	A
KHAR	Jul 26	0730 E		0735	074	0.95	H-alpha	S
KHAR	Jul 26	0815		0827	170	0.46	H-alpha	S
KHAR	Jul 26	1010		1019	243	0.88	H-alpha	S
KHAR	Jul 26	1014		1043	249	0.88	H-alpha	S
KHAR	Jul 27	0715 E		0745	243	0.96	H-alpha	S
KHAR	Jul 28	0655 E		0732	238	1.00	H-alpha	S
KHAR	Jul 28	0755 E		0833	242	1.00	H-alpha	Sp
KHAR	Jul 28	1015 E		1055	242	1.00	H-alpha	Sp
KHAR	Jul 31	0503 E	0902 U	0902	D 110	1.00	H-alpha	A
KHAR	Jul 31	0503 E	0902 U	0902	D 131	1.00	H-alpha	A

QUALIFIERS ON START, MAX AND END TIMES
- D = event ended after tabulated time
- E = event began before the tabulated time
- U = uncertain time

REPORTING STATIONS
- KHAR = Kharkov
- SGMR = Sagamore Hill

TYPE OF EVENT
- A = eruptive active region prominence
- CB = coronal cloud bubble
- D = coronal depletions
- E = coronal enhancement
- EL = coronal expanding loop
- II = Type II radio burst
- IVm = moving Type IV radio burst
- Q = eruptive quiescent prominence
- R = coronal ray or streamer
- S = flare-surge if there is a known flare association
- SP = flare-spray if there is a known flare association
- * = movement may be caused by ionospheric refraction

ACTIVE PROMINENCES AND FILAMENTS

JULY 1987

Day	Event Type	Start (UT)	End (UT)	Lat	CMP CMD	Mo	Day	Imp	Extent	Blue Shift (.1 A)	Red Shift (.1 A)	Obs Type	Sta	NOAA/ USAF Reg#	Remarks
01	DSD	0655E	0704D	N32	E00	07	1.3	1				V	KHAR		
01	BSL	0705E	0722	S33	W90	06	24.2	1				V	KHAR		
02	APR	0014	0246D	N26	W90	06	25.1	1				V	VORO		
02	ADF	0550E	1608D	S25	E72	07	7.8	1	08	9	9	E	SVTO		
02	ADF	2145E	0349D	N38	W03	07	2.7	1	11	9	9	E	PALE	4820	
03	ADF	1509E	1924D	N38	W15	07	2.4	2	06	8	6	E	RAMY	4820	
03	ADF	1536E	1723D	N31	W19	07	2.1	1	07	9	9	E	SVTO	4820	
03	ADF	1812E	0450D	N41	W14	07	2.6	1	14	8	9	E	PALE	4820	
04	SDF	0207E	1245D	N38	W26	07	2.0		05	0	0	E	HOLL	4820	
04	AFS	0611E	1430D	N30	W06	07	3.8		03	6	6	E	SVTO		
04	ADF	0630E	0708D	N38	W26	07	2.2	1				V	KHAR		
04	ADF	0637E	1746D	N31	W27	07	2.1	1	08	9	9	E	SVTO	4820	
04	BSL	0647	0854	N15	W90	06	27.6	1				C	ABST		
04	ADF	0658E	0819D	N34	W25	07	2.3	2	08	9	9	E	LEAR	4820	
04	ADF	0708E	0805D	N35	W27	07	2.1	1				V	KHAR		
04	ADF	0918E	1048D	N35	W27	07	2.2	1				V	KHAR		
04	ADF	1348E	2045D	N35	W30	07	2.2	1	06	9	9	E	RAMY	4820	
04	ADF	1822E	0448D	N38	W33	07	2.1		12	9	9	E	PALE	4820	
06	SDF	0453E	1710D	N22	E60	07	10.8		11	0	0	E	PALE		
06	SDF	1230E	1640D	N36	W59	07	1.8	3	06	5	5	E	SVTO	4820	
06	SDF	1418E	1418D	N25	E40	07	9.7		12	0	0	E	HOLL		
06	ADF	1640E	1737D	N36	W59	07	1.9	2	20	9	9	E	SVTO	4820	
06	SDF	1737E	0406D	N36	W59	07	2.0		10	9	9	E	SVTO	4820	
06	ADF	1800E	0501D	N34	E58	07	11.4	1	15	8	7	E	PALE	4820	
06	AFS	2150E	0501D	S18	W23	07	5.1		01	8	8	E	PALE		
06	AFS	2245E	0205D	S18	W23	07	5.2		03	9	9	E	HOLL		
07	AFS	0012E	0907D	S18	W25	07	5.1		02	9	9	E	LEAR		
07	AFS	0445E	1747D	S19	W28	07	5.1		02	9	9	E	SVTO	4822	
07	ADF	0845E	0910	N32	W68	07	2.0	1				V	KHAR		
07	AFS	1220E	1747D	S26	E21	07	9.1		01	9	9	E	SVTO		
07	AFS	1250E	1714D	S27	E20	07	9.1		02	9	9	E	RAMY		
07	AFS	1307E	1630D	S26	E20	07	9.1		01	9	9	E	HOLL		
07	AFS	2145E	0339D	S19	W37	07	5.1		03	9	9	E	PALE	4822	
07	AFS	2216E	2226D	S19	W37	07	5.1		02	9	9	E	RAMY	4822	
07	SDF	2238E	1150D	N46	W51	07	3.7		10	0	0	E	RAMY	4820	
07	AFS	2245E	0205D	S18	W23	07	6.2		03	9	9	E	HOLL		
08	AFS	0030E	0835D	S19	W38	07	5.1		03	9	9	E	LEAR	4822	
08	AFS	0408E	1714D	S18	W42	07	5.0		02	9	9	E	SVTO	4822	
08	ADF	0457E	0835D	S22	W40	07	5.1	1	05	9	9	E	LEAR	4822	
08	SDF	0645E	0930D	S21	W39	07	5.3	3	05	9	9	E	SVTO	4822	
08	DSD	0649E	0702	S20	W40	07	5.2	1				V	KHAR		
08	ADF	0726E	0828	S18	W43	07	5.0	1				V	KHAR		
08	ADF	0853E	1027D	S18	W43	07	5.1	1				V	KHAR		
08	AFS	1030E	2201D	S18	W50	07	4.6		02	9	9	E	RAMY	4822	
08	DSD	1231E	1348D	S18	W43	07	5.2		03	7	8	E	RAMY	4822	
08	SDF	1447E	1447D	S25	W15	07	7.4		11	7	8	E	RAMY		
08	AFS	2150E	0345D	S18	W51	07	5.0		01	6	8	E	PALE	4822	
09	SDF	0203E	0320D	S19	W51	07	5.2	1	07	9	9	E	LEAR	4822	
09	AFS	1036E	1640D	S19	W58	07	5.0		02	9	9	E	SVTO	4822	
09	AFS	1548E	1759D	S20	W62	07	4.9		02	8	9	E	RAMY	4822	
09	APR	1750	2134D	N30	W90	07	2.7	2		9	9	E	HOLL	4820	
09	APR	2142E	0300D	S33	W90	07	2.7	1				V	VORO		
09	APR	2222E	0300D	N39	W90	07	2.6	2				V	VORO		
09	AFS	2324E	0320D	S19	W50	07	6.1	1	02	9	9	E	LEAR	4822	
09	ADF	2355E	0203D	S19	W50	07	6.2	1	07	9	9	E	LEAR	4822	
10	BSL	0640	0900	S30	W90	07	3.2	1				C	ABST		
10	APR	0650E	0730E	N39	E90	07	17.6	1				V	KHAR		
10	DSD	0905E	0925	S19	W72	07	4.9	1				V	KHAR		
10	SDF	0945E	0003D	S52	E63	07	15.8	3	19	0	0	E	LEAR		
10	DSD	1011E	1055	S19	W72	07	4.9	1				V	KHAR		
10	APR	1025E	1037	N41	W90	07	3.1	1				V	KHAR		
10	DSD	1027E	1247D	S21	W72	07	4.9		02	9	9	E	SVTO	4822	
10	ADF	1028E	1646D	S20	W74	07	4.8	1	03	9	9	E	SVTO	4822	

ACTIVE PROMINENCES AND FILAMENTS

JULY 1987

Day	Event Type	Start (UT)	End (UT)	Lat	CMD	CMP Mo	CMP Day	Imp	Extent	Blue Shift (.1 A)	Red Shift (.1 A)	Obs Type	Sta	NOAA/ USAF Reg#	Remarks
10	APR	1423E	2201D	N37	E90	07	17.8	2		9	9	E	RAMY		
10	APR	1608E	0125D	N39	E90	07	18.0	2		8	7	E	HOLL		
10	APR	1925E	0125D	S32	W90	07	3.7	1		5	7	E	HOLL		
11	BSL	0654	0843	S40	E90	07	18.6	1				C	ABST		
12	BSL	0537	0710	N33	W90	07	5.1	1				C	ABST		
12	SDF	1500E	1740D	S16	W42	07	9.4		03	0	0	E	RAMY		
12	ADF	1740E	2159D	N39	E71	07	18.5	2	09	9	5	E	RAMY		
12	DSD	1946E	2140D	S30	W43	07	9.4		02	9	9	E	RAMY		
13	ADF	0700	0725	N40	E63	07	18.4	1				V	KHAR		
13	BSL	0737	0910	S45	W90	07	5.8	1				C	ABST		
13	ADF	0945E	1027	N40	E63	07	18.5	1				V	KHAR		
13	ADF	2135E	0411D	N43	E59	07	18.8	1	12	7	9	E	PALE		
14	APR	0103E	0300D	N48	E90	07	21.6	1				V	VORO		
14	APR	0103E	0300D	S45	W90	07	6.6	1				V	VORO		
14	APR	0125	0300D	N14	E90	07	20.9	1				V	VORO		
14	ADF	0148	0300D	N42	E54	07	18.5	1				V	VORO		
14	ADF	0605E	1721D	N49	E63	07	19.6	1	22	9	8	E	SVTO		
14	APR	0700E	0920	S42	W90	07	6.9	1				V	KHAR		
14	APR	0700E	1000D	S24	W90	07	7.3	1				V	KHAR		
14	BSL	0741	0907	S45	W90	07	6.8	1				C	ABST		
14	ADF	1257E	1639D	N37	E41	07	17.8	2	16	9	9	E	RAMY		
14	ADF	1711E	2202D	N41	E45	07	18.4	1	09	7	8	E	PALE		
14	APR	2359E	0458D	S34	E90	07	22.2	2		9	9	E	LEAR		
15	ASR	0458	0732D	S33	E90	07	22.3			9	9	E	LEAR		
15	BSL	0506	0850	S45	W90	07	7.7	1				C	ABST		
15	ADF	0525E	0911D	N34	E28	07	17.4	1	07	9	6	E	LEAR		
15	ASR	0835E	0911D	S33	E90	07	22.5			9	9	E	LEAR		
15	AFS	1226E	2126D	N27	W53	07	11.4		02	9	9	E	RAMY		
15	ADF	1226E	2126D	N53	E52	07	20.0	2	15	9	9	E	RAMY		
15	ASR	1226E	2126D	S31	E90	07	22.6			9	9	E	RAMY		
15	ASR	1257E	1524D	S33	E90	07	22.7	1		9	9	E	SVTO		
15	AFS	1310E	0011D	S27	E53	07	19.7		03	9	9	E	HOLL	4823	
15	ASR	1311E	1920D	S32	E90	07	22.7			9	9	E	HOLL		
15	DSD	1619E	2126D	N27	W53	07	11.5		02	9	9	E	RAMY		
15	AFS	1640E	2325D	N28	W57	07	11.2		01	9	9	E	PALE		
15	DSD	1641E	1749D	N28	W55	07	11.4		04	9	9	E	PALE		
15	ADF	1700E	2325D	N52	E48	07	19.8	1	42	9	9	E	PALE		
15	DSD	1836E	1850D	N28	W54	07	11.5		01	9	9	E	PALE	4823	
15	ASR	1858	1915D	S32	E90	07	22.9			8	7	E	PALE		
15	ASR	2030	2120D	S32	E87	07	22.7			9	9	E	HOLL		
15	APR	2240E	2315D	S34	E90	07	23.1	2		9	9	E	HOLL		
15	EPL	2315E	2326	S34	E90	07	23.1			9	9	E	HOLL		
15	SDF	2320E	1700	N23	E14	07	17.0		14	0	0	E	PALE		
15	APR	2359E	0458D	S34	E90	07	23.2	2		9	9	E	LEAR		
16	AFS	0025E	0913D	N27	W58	07	11.5		03	9	9	E	LEAR	4823	
16	ASR	0109	0125D	S32	E90	07	23.2			9	9	E	LEAR		
16	EPL	0125	0212	S32	E90	07	23.2			9	9	E	LEAR		
16	SDF	0415E	0540D	N33	E17	07	17.5	3	13	9	9	E	LEAR		
16	AFS	0510E	0947D	N27	W63	07	11.3		02	9	9	E	SVTO	4823	
16	ADF	0520E	0913D	N51	E41	07	19.7	2	26	9	9	E	LEAR		
16	ADF	0725E	0927D	N44	E25	07	18.4	2				V	KHAR		
16	ADF	1630E	0500D	N42	E67	07	22.2		32	9	9	E	PALE		
16	DSD	1720	1815D	N26	W78	07	10.7		02	9	9	E	PALE	4823	
16	AFS	1950E	2017D	N28	W67	07	11.6		01	7	8	E	HOLL	4823	
16	DSD	2315E	0104D	N28	W74	07	11.2		08	9	9	E	PALE	4823	
17	DSD	0125E	0157D	N38	E12	07	18.0	2	03	9	9	E	LEAR		
17	DSD	0138E	0300D	N31	E10	07	17.8		02	9	9	E	PALE		
17	APR	0655E	1008	S55	W90	07	9.5	1				V	KHAR		
17	BSL	0805E	0958	N19	E90	07	24.2	1				V	KHAR		
17	APR	0827E	0929D	N22	E90	07	24.3	1		9	9	E	LEAR		
17	ASR	0907E	1640D	N24	E90	07	24.3			9	9	E	SVTO		
17	BSL	1005	1025	N19	E90	07	24.3	1				V	KHAR		
17	BSL	1035E	1055	N19	E90	07	24.3	1				V	KHAR		
17	ASR	1510E	1630D	N23	E89	07	24.5			9	9	E	HOLL		

ACTIVE PROMINENCES AND FILAMENTS

JULY 1987

Day	Event Type	Start (UT)	End (UT)	Lat	CMD	CMP Mo	CMP Day	Imp	Extent	Blue Shift (.1 A)	Red Shift (.1 A)	Obs Type	Sta	NOAA/ USAF Reg#	Remarks
17	ASR	2142	0135D	N27	W86	07	11.2			9	9	E	PALE	4823	
17	ASR	2148E	2244	N27	W86	07	11.2			9	9	E	HOLL	4823	
17	ASR	2206E	2206D	N25	W85	07	11.3			8	8	E	RAMY	4823	
17	ADF	2320E	0428D	S30	E53	07	22.1	1	01	5	9	E	PALE	4824	
18	ADF	0158E	0310D	S33	E54	07	22.4	2	07	9	9	E	LEAR	4824	
18	SDF	0255E	0310D	S33	E54	07	22.4		07	0	0	E	LEAR	4824	
18	AFS	0310E	0911D	S32	E57	07	22.6		04	9	9	E	LEAR	4824	
18	BSL	0546	0838	N34	E90	07	25.4	1				C	ABST		
18	ADF	0630E	0934D	S29	E45	07	21.8	1	07	9	9	E	SVTO	4824	
18	ADF	0631E	1733D	N21	E77	07	24.2	1	05	9	9	E	SVTO	4825	
18	AFS	1730E	0340D	S29	E36	07	21.5		02	9	9	E	PALE	4826	
19	AFS	0020E	0914D	S29	E33	07	21.6		02	7	8	E	LEAR	4826	
19	AFS	0625E	1723D	S28	E27	07	21.4		01	9	9	E	SVTO	4826	
19	AFS	1055E	1801D	S29	E27	07	21.6		03	9	9	E	RAMY	4826	
19	AFS	1350E	0057D	S27	E24	07	21.4		02	9	9	E	HOLL	4826	
19	ADF	1502E	1723D	N21	E59	07	24.1	1	02	9	9	E	SVTO	4825	
19	ADF	1525E	1727D	N61	E22	07	21.6	1	04	9	9	E	RAMY	4825	
19	AFS	1718E	0449D	S29	E23	07	21.5		02	9	9	E	PALE	4826	
19	ADF	2052E	0449D	N22	E56	07	24.2	1	03	8	9	E	PALE	4825	
20	ADF	0050E	0911D	N21	E54	07	24.2	1	03	9	9	E	LEAR	4825	
20	AFS	0050E	0911D	S28	E19	07	21.5		02	9	9	E	LEAR	4826	
20	SDF	0057E	1739D	N40	W43	07	16.5		40	0	0	E	HOLL		
20	BSL	0722E	0733	S22	E90	07	27.2	1				V	KHAR		
20	ASR	0730E	0911D	S22	E90	07	27.2			9	9	E	LEAR		
20	DSD	0742E	0748D	S18	E48	07	24.0	1				V	KHAR		
20	DSD	0753E	0836D	N20	E48	07	24.0	1				V	KHAR		
20	DSD	0817	0836D	N20	E21	07	21.9	1				V	KHAR		
20	ASR	1117E	2201D	S20	E88	07	27.2			9	9	E	RAMY		
20	ADF	1138E	1138D	S29	E14	07	21.6	1	03	9	9	E	RAMY	4826	
20	AFS	1208E	2201D	N21	E19	07	22.0		01	9	9	E	RAMY		
20	SDF	1331E	1320D	N55	E15	07	21.8		25	0	0	E	RAMY		
20	AFS	1610E	2201D	S28	E12	07	21.6		02	9	9	E	RAMY	4826	
20	AFS	1703E	0459D	N22	E15	07	21.9		01	9	9	E	PALE		
20	AFS	1703E	0459D	S29	E10	07	21.5		03	9	9	E	PALE	4826	
20	ASR	1711E	0040D	S21	E84	07	27.1			5	4	E	PALE		
21	AFS	0105E	0846D	S29	E07	07	21.6		04	9	9	E	LEAR	4826	
21	ADF	0105E	0846D	S31	E14	07	22.1	1	05	9	9	E	LEAR	4824	
21	ASR	0112E	0459D	S24	E81	07	27.3			7	9	E	PALE	4827	
21	ASR	0238E	0846D	S23	E90	07	28.0			9	9	E	LEAR	4827	
21	ADF	0723E	0910	S26	E80	07	27.5	1				V	KHAR		
21	BSL	0854E	0917D	S25	E90	07	28.3	1				V	KHAR		
21	ADF	0913E	0930D	S26	E80	07	27.6	1				V	KHAR		
21	ASR	1228E	1349D	S23	E75	07	27.3			9	9	E	RAMY	4827	
21	AFS	1228E	1349D	S28	E00	07	21.5		02	9	9	E	RAMY	4826	
21	ADF	1228E	1349D	S35	E14	07	22.6	2	05	9	6	E	RAMY	4824	
21	AFS	1331E	1349D	S18	E31	07	23.9		01	9	9	E	RAMY		
21	AFS	1653E	0010D	N22	W03	07	21.5		02	9	9	E	PALE	4828	
21	AFS	1653E	0010D	S24	E71	07	27.2		03	9	9	E	PALE	4827	
21	AFS	1653E	0010D	S28	W02	07	21.5		02	9	8	E	PALE	4826	
21	AFS	1750E	0010D	S17	E28	07	23.9		02	9	9	E	PALE		
21	ADF	1750E	0010D	S20	E27	07	23.8		03	9	9	E	PALE		
21	AFS	1837E	0014D	S18	E28	07	23.9	1		6	8	E	HOLL	4829	
22	DSD	0315E	0600D	S29	W06	07	21.7		02	9	9	E	LEAR	4826	
22	AFS	0315E	0918D	N21	W03	07	21.9	1	02	8	6	E	LEAR	4828	
22	AFS	0315E	0918D	S18	E23	07	23.9	1	02	9	9	E	LEAR	4829	
22	DSD	0315E	0918D	S31	E05	07	22.5		02	9	9	E	LEAR	4824	
22	BSL	0520	0908	S30	E90	07	29.3	1				C	ABST		
22	AFS	0600E	0918D	S28	W08	07	21.6		02	9	9	E	LEAR	4826	
22	ASF	0634E	1005D	S31	W09	07	21.6	1				V	KHAR		
22	ADF	0656E	0728	S23	E69	07	27.6	1				V	KHAR		
22	ADF	0701E	0729	N44	W04	07	22.0	1				V	KHAR		
22	AFS	1127E	2115D	S28	W10	07	21.7		03	9	9	E	RAMY	4826	
22	DSD	1127E	2115D	S31	W06	07	22.0		03	9	9	E	RAMY	4826	
22	AFS	1133E	2115D	S19	E19	07	23.9		01	9	9	E	RAMY	4829	
22	ADF	1349E	2115D	N22	E20	07	24.1	2	05	9	9	E	RAMY	4825	
22	AFS	1403E	0114D	S29	W13	07	21.6		02	9	9	E	HOLL	4826	

ACTIVE PROMINENCES AND FILAMENTS

JULY 1987

Day	Event Type	Start (UT)	End (UT)	Lat	CMP	Mo	Day	Imp	Extent	Blue Shift (.1 A)	Red Shift (.1 A)	Obs Type	Sta	NOAA/ USAF Reg#	Remarks
22	ADF	1407E	2115D	S34	E05	07	23.0	2	08	9	9	E	RAMY	4824	
22	AFS	1654E	1631D	N21	W11	07	21.9		03	7	7	E	SVTO	4828	
22	ADF	1654E	1631D	N22	W18	07	21.3	1	06	9	9	E	SVTO	4825	
22	ADF	1654E	1631D	S23	W57	07	18.3	1	09	9	9	E	SVTO	4827	
22	DSD	1725E	1801D	S29	W16	07	21.5	2	02	9	9	E	HOLL	4826	
22	AFS	1733E	0045D	S18	E14	07	23.8		02	7	9	E	HOLL	4829	
22	ADF	1855E	0203D	N22	E15	07	23.9	1	06	9	9	E	PALE	4825	
22	AFS	1907E	0203D	S29	W15	07	21.6	1	02	9	9	E	PALE	4826	
22	ASR	1930E	0114D	N25	E90	07	29.8			9	9	E	HOLL		
22	ADF	1932E	0203D	S28	W18	07	21.4	1	03	9	9	E	PALE	4826	
22	ADF	1932E	0203D	S29	W17	07	21.5	1	03	9	9	E	PALE	4826	
22	ASR	2050E	0114D	N30	E90	07	29.9			9	9	E	HOLL		
22	ASR	2055E	0203D	N30	E90	07	29.9			9	9	E	PALE		
22	ASR	2314E	0203D	N27	E90	07	30.0			9	9	E	PALE		
23	AFS	0030E	0917D	S20	E11	07	23.9		02	6	7	E	LEAR	4829	
23	AFS	0030E	0917D	S28	W17	07	21.7		03	9	9	E	LEAR	4826	
23	ASR	0334E	0917D	N29	E90	07	30.2	1		5	7	E	LEAR		
23	APR	0607	0918	N44	E90	07	30.7	1				C	ABST		
23	APR	0607	0918	S31	E90	07	30.3	1				C	ABST		
23	ADF	0623E	1702D	N22	E10	07	24.0	1	05	9	9	E	SVTO	4825	
23	ADF	0625E	1702D	S30	W22	07	21.5	1	08	9	9	E	SVTO	4826	
23	ADF	0632E	1702D	S22	E49	07	27.0	1	07	9	9	E	SVTO	4827	
23	DSD	0757E	0818	S28	W25	07	21.4	1				V	KHAR		
23	ADF	0815E	0820	S20	E09	07	24.0	1				V	KHAR		
23	DSD	1229E	1845D	S18	E09	07	24.2		02	9	9	E	RAMY	4829	
23	DSD	1229E	1845D	S29	W19	07	22.0		03	9	9	E	RAMY	4826	
23	AFS	1229E	1845D	S29	W26	07	21.5		02	9	9	E	RAMY	4826	
23	AFS	1323E	0039D	S27	W25	07	21.6		01	9	9	E	HOLL	4826	
23	ASR	1352E	1845D	N88	E32	07	26.6			9	9	E	RAMY	4831	
23	AFS	1430E	1702D	S20	E44	07	27.0		02	9	9	E	SVTO	4827	
23	DSD	1435E	1845D	S19	E46	07	27.1		02	9	9	E	RAMY	4827	
23	ASR	1447E	1545D	N30	E90	07	30.7			9	9	E	HOLL		
23	ADF	1453E	1845D	N21	E08	07	24.2	2	06	9	9	E	RAMY	4825	
23	DSD	1510E	1823D	S18	E07	07	24.2		02	9	9	E	HOLL	4829	
23	DSD	1510E	2358D	S27	W27	07	21.5		02	9	9	E	HOLL	4826	
23	DSD	1511E	1702D	S27	W28	07	21.4		03	9	9	E	SVTO	4826	
23	AFS	1530E	0039D	S21	E43	07	26.9	1	01	6	8	E	HOLL	4827	
23	DSD	1555E	1702D	S18	E06	07	24.1		02	9	9	E	SVTO	4829	
23	AFS	1733E	2236D	S19	E05	07	24.1		02	9	9	E	PALE	4829	
23	AFS	1733E	2236D	S28	W28	07	21.5		02	9	9	E	PALE	4826	
23	DSD	2205E	2359D	S19	E02	07	24.1		03	9	9	E	HOLL	4829	
24	AFS	0525E	0831D	S31	W34	07	21.5		03	9	6	E	LEAR	4826	
24	ADF	0530E	0831D	N19	W03	07	24.0	1	06	9	5	E	LEAR	4825	
24	AFS	0540E	0831D	S19	W02	07	24.1		02	8	5	E	LEAR	4829	
24	ADF	0606E	0608D	S34	W22	07	22.5	1	08	9	9	E	SVTO	4824	
24	BSL	0607	0643	N38	E90	07	31.5	1				C	ABST		
24	ADF	0610E	1712D	S23	E37	07	27.1	1	09	9	9	E	SVTO	4827	
24	ADF	0618E	1712D	N21	W03	07	24.0	1	06	9	9	E	SVTO	4825	
24	ADF	0636E	0655	S23	E39	07	27.3	1				V	KHAR		
24	ADF	0720	0830	S23	E39	07	27.3	1				V	KHAR		
24	ADF	0847	1011D	S23	E39	07	27.4	1				V	KHAR		
24	DSD	0930E	1712D	S21	E37	07	27.2		05	9	9	E	SVTO	4827	
24	DSD	1052	1107	S27	W40	07	21.3	1				V	KHAR		
24	ADF	1257E	1824D	S34	W26	07	22.5	2	08	8	6	E	RAMY	4824	
24	ADF	1555E	1824D	N18	W08	07	24.0	2	09	9	6	E	RAMY	4825	
24	ADF	1606E	1824D	S19	E34	07	27.3	1	11	9	9	E	RAMY	4827	
24	AFS	1617E	1824D	S18	W09	07	24.0		03	6	6	E	RAMY	4827	
24	DSD	1704E	1708D	N19	W09	07	24.0		08	9	9	E	PALE	4825	
24	ADF	1704E	2136D	N19	W09	07	24.0	1	08	9	9	E	PALE	4825	
24	ADF	1704E	2137D	S20	E31	07	27.1	1	03	9	9	E	PALE	4827	
24	AFS	1704E	2137D	S23	E33	07	27.2		02	9	9	E	PALE	4827	
24	SDF	1712E	0444D	N19	W10	07	23.9		06	0	0	E	SVTO	4825	
24	ADF	1731E	0126D	S20	E31	07	27.1	1	05	9	9	E	HOLL	4827	
25	APR	0000	0138D	N45	W90	07	17.5	1				V	VORO		
25	ADF	0134E	0715D	S36	W33	07	22.4	1	07	9	9	E	LEAR	4824	
25	BSL	0619	0905	N30	E90	08	1.3	1				C	ABST		
25	BSL	0619	0905	N44	W90	07	17.8	1				C	ABST		
25	ADF	1045	1130D	S26	E22	07	27.1	1				V	KHAR		

ACTIVE PROMINENCES AND FILAMENTS

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Day	Event Type	Start (UT)	End (UT)	Lat	CMD	CMP Mo	CMP Day	Imp	Extent	Blue Shift (.1 A)	Red Shift (.1 A)	Obs Type	Sta	NOAA/ USAF Reg#	Remarks
25	ADF	1116E	2234D	S23	E18	07	26.8	1	04	9	9	E	RAMY	4827	
25	ADF	1124E	2234D	S34	W37	07	22.5	2	05	9	8	E	RAMY	4824	
25	ADF	1226E	1705D	S27	E22	07	27.2	1	04	9	9	E	SVTO	4827	
25	ADF	1330E	0033D	S24	E19	07	27.0	1	04	9	9	E	HOLL	4827	
25	DSD	1708	1720	S20	E07	07	26.2		02	9	9	E	PALE	4830	
25	ADF	1745E	0306D	S34	W46	07	22.1	1	09	9	9	E	PALE	4824	
25	AFS	1747E	0306D	N31	E58	07	30.3		02	7	7	E	PALE	4831	
25	ADF	1749E	1850D	S27	E18	07	27.1	1	07	9	9	E	PALE	4827	
25	SDF	1850E	1850D	S27	E18	07	27.2		07	0	0	E	PALE	4827	
25	APR	2136E	0232D	N44	W90	07	18.4	1				V	VORO		
26	AFS	0030E	0040D	N29	E53	07	30.2		02	9	5	E	LEAR	4831	
26	AFS	0030E	0040D	S28	W60	07	21.3		02	8	5	E	LEAR	4826	
26	AFS	0035E	0159D	S27	W59	07	21.4		03	9	9	E	HOLL	4826	
26	AFS	0302E	0306D	S28	W60	07	21.4		02	9	9	E	PALE	4826	
26	ADF	0327E	0332D	S23	E15	07	27.3	1	03	9	9	E	PALE	4827	
26	AFS	0532E	1706D	S29	W63	07	21.3		02	9	9	E	SVTO	4826	
26	BSL	0547	0836	N32	E90	08	2.4	1				C	ABST		
26	BSL	0547	0836	N45	E90	08	2.7	1				C	ABST		
26	AFS	0620E	0738D	S30	W65	07	21.1		03	9	9	E	LEAR	4826	
26	DSD	0730E	0735	N16	E74	07	31.9	1				V	KHAR		
26	AFS	0812E	1706D	S21	E01	07	26.4		02	9	9	E	SVTO	4830	
26	DSD	0815	0827	S23	E02	07	26.5	1				V	KHAR		
26	DSD	1010	1019	S30	W52	07	22.3	1				V	KHAR		
26	DSD	1014	1043	S26	W56	07	22.1	1				V	KHAR		
26	ADF	1127E	1706D	N27	W64	07	21.5	1	03	9	9	E	SVTO	4828	
26	AFS	1205E	1505D	S22	W01	07	26.4		02	9	8	E	RAMY	4830	
26	ADF	1215E	2000D	S27	E09	07	27.2	1	05	9	9	E	RAMY	4827	
26	ADF	1246E	2000D	S35	W51	07	22.4	1	06	9	9	E	RAMY	4824	
26	ADF	1330E	0033D	S24	E19	07	28.0	1	04	9	9	E	HOLL	4827	
26	AFS	1730E	2255D	N29	E40	07	29.9		03	7	9	E	HOLL	4831	
26	AFS	1749E	0224D	S21	W05	07	26.3		02	9	9	E	PALE	4830	
26	AFS	1818E	2255D	S21	W05	07	26.4		03	8	9	E	HOLL	4830	
27	BSL	0614	0833	N43	W90	07	19.8	1				C	ABST		
27	DSD	0715E	0745	S27	W70	07	21.8	1				V	KHAR		
27	SDF	1356E	1900D	S30	E20	07	29.1		30	0	0	E	RAMY		
27	ASR	1725E	0245D	S29	W90	07	20.7			9	9	E	PALE	4826	
27	DSD	1748E	1855D	S22	W01	07	27.7		02	9	9	E	PALE	4827	
27	ASR	1915E	0145D	S28	W87	07	21.0			9	9	E	HOLL	4826	
27	DSD	2109E	0130D	S20	E00	07	27.9		03	9	9	E	HOLL	4827	
28	ASR	0315E	0914D	S32	W90	07	21.0			6	7	E	LEAR	4826	
28	BSL	0502	0803	N53	W90	07	20.5	1				C	ABST		
28	BSL	0502	0803	S27	W90	07	21.2	1				C	ABST		
28	ASR	0507E	0511D	S31	W90	07	21.1			9	9	E	SVTO	4826	
28	AFS	0519E	1735D	S23	W16	07	27.0		02	9	9	E	SVTO	4827	
28	ADF	0610	0823	S35	W25	07	26.2	1				C	ABST		
28	BSL	0655E	0732	S32	W90	07	21.2	1				V	KHAR		
28	ADF	0655E	0810	S35	E21	07	30.0	1				V	KHAR		
28	BSL	0718	0803	N27	W90	07	21.3	1				C	ABST		
28	BSL	0718	0803	N33	W90	07	21.1	1				C	ABST		
28	BSL	0755E	0833	S28	W90	07	21.3	1				V	KHAR		
28	BSL	1015E	1055	S28	W90	07	21.4	1				V	KHAR		
28	ASR	1210E	1919D	S34	W90	07	21.3			9	9	E	RAMY	4826	
28	ASR	1306E	2315D	S31	W90	07	21.4			9	9	E	HOLL	4826	
28	ASR	1715E	1939D	S23	W80	07	22.5	1		0	0	E	PALE	4826	
28	AFS	2150E	0035D	S29	W14	07	27.8		02	9	9	E	HOLL		
29	BSL	0504	0820	S36	W90	07	22.0	1				C	ABST		
29	ASR	0525E	1335D	S38	W90	07	21.9			9	9	E	SVTO	4824	
29	AFS	0529E	1745D	S23	W22	07	27.5		03	6	8	E	SVTO	4827	
29	ADF	0905E	1745D	S28	W24	07	27.5	2	06	9	9	E	SVTO	4827	
29	AFS	1043E	1745D	N20	E00	07	29.4		02	9	9	E	SVTO		
29	AFS	1155E	2206D	N21	E00	07	29.5		02	9	9	E	RAMY	4833	
29	AFS	1155E	2206D	S29	W23	07	27.7		04	9	9	E	RAMY	4832	
29	ADF	1205E	2206D	S24	W34	07	26.9	2	11	8	6	E	RAMY	4827	
29	ADF	1310E	1745D	S31	W22	07	27.8	2	05	9	9	E	SVTO		
29	ASR	1315E	1400D	S36	W90	07	22.3			9	9	E	RAMY	4824	
29	AFS	1330E	2205D	S29	W24	07	27.7		02	9	9	E	HOLL	4832	
29	APR	1330E	2209D	S35	W90	07	22.4			8	9	E	HOLL	4824	

ACTIVE PROMINENCES AND FILAMENTS

JULY 1987

Day	Event Type	Start (UT)	End (UT)	Lat	CMD	CMP Mo	CMP Day	Imp	Extent	Blue Shift (.1 A)	Red Shift (.1 A)	Obs Type	Sta	NOAA/ USAF Reg#	Remarks
29	APR	1338E	1745D	S38	W90	07	22.3			9	9	E	SVTO	4824	
29	AFS	1340E	2206D	N21	W02	07	29.4		01	9	9	E	HOLL	4833	
29	APR	1400E	2206D	S36	W90	07	22.3	2		9	9	E	RAMY	4824	
29	DSD	1515E	1628D	N18	W05	07	29.2		03	9	9	E	RAMY		
29	DSD	1627E	1725D	N20	W04	07	29.4		03	9	9	E	HOLL		
29	DSD	1645E	1729D	N19	W05	07	29.3		03	9	9	E	SVTO		
29	DSD	1648E	2147D	N19	W05	07	29.3		03	9	9	E	PALE		
29	AFS	1706E	2137D	N21	W02	07	29.5		01	9	9	E	PALE		
29	APR	1745E	2137D	S35	W80	07	23.3	1		9	9	E	PALE	4824	
29	AFS	1750E	2137D	S29	W28	07	27.5		01	9	9	E	PALE	4832	
29	ADF	1752E	2137D	S27	W31	07	27.3	1	04	9	9	E	PALE	4827	
29	DSD	1800E	1805D	S29	W27	07	27.6		03	9	9	E	PALE	4832	
29	ASR	1830E	2208D	S35	W90	07	22.6			9	8	E	HOLL	4824	
29	DSD	2021E	2154D	N20	W08	07	29.2		02	9	9	E	RAMY	4833	
29	AFS	2150E	0035D	S29	W14	07	28.8		02	9	9	E	HOLL		
29	DSD	2210E	2320D	S29	W30	07	27.6		02	9	9	E	HOLL	4827	
30	ASR	0230E	0411D	S36	W90	07	22.9			9	9	E	LEAR	4824	
30	DSD	0332E	0409D	N31	E00	07	30.1		02	9	9	E	LEAR	4831	
30	BSL	0404	0900	S43	W90	07	22.7	1				C	ABST		
30	ASR	0445E	0910D	N09	E90	08	5.9			9	9	E	SVTO		
30	ASR	0448E	1015D	S35	W90	07	23.0			9	9	E	SVTO	4824	
30	AFS	0450E	1721D	S30	W31	07	27.8		02	9	9	E	SVTO	4832	
30	ADF	0452E	1721D	S28	W35	07	27.5	2	05	9	9	E	SVTO	4827	
30	AFS	0454E	1721D	S27	W40	07	27.1		02	9	9	E	SVTO	4827	
30	ASR	0530E	0711D	S33	W90	07	23.1			9	9	E	LEAR	4824	
30	ASR	0535E	0720D	N03	E90	08	5.9			9	9	E	LEAR		
30	AFS	1125E	1924D	N19	W12	07	29.5		04	9	9	E	RAMY	4833	
30	ASR	1132E	1924D	N16	W90	07	23.6	1		9	9	E	RAMY	4825	
30	ADF	1136E	1924D	S27	W38	07	27.5	1	08	9	9	E	RAMY	4827	
30	DSD	1138E	1255D	S32	W39	07	27.4	1	03	9	9	E	RAMY	4832	
30	AFS	1230E	1721D	N20	W15	07	29.4		03	9	9	E	SVTO	4833	
30	ASR	1320	1721D	N18	W90	07	23.7			7	9	E	SVTO	4825	
30	AFS	1718E	0455D	N16	E15	07	31.8		01	9	9	E	PALE		
30	AFS	1738E	1924D	N15	E14	07	31.8		02	9	9	E	RAMY		
30	DSD	1755E	1804D	N20	W16	07	29.5	2	02	7	9	E	RAMY	4833	
30	DSD	1755E	1924D	N15	E13	07	31.7	2	03	9	9	E	RAMY		
30	AFS	1755E	1924D	S31	W40	07	27.6		02	9	7	E	RAMY	4832	
30	AFS	1800E	2359D	N15	E19	08	1.2	2	03	9	9	E	HOLL	4834	
30	AFS	1910E	0053D	S22	W44	07	27.4		02	9	9	E	HOLL	4827	
30	AFS	1950E	2240D	S31	W38	07	27.8		02	7	5	E	HOLL	4832	
31	AFS	0030E	0828D	N14	E11	07	31.8		02	9	9	E	LEAR	4834	
31	ASR	0035E	0156D	N17	W90	07	24.2			7	7	E	LEAR	4825	
31	DSD	0045E	0106D	N15	E10	07	31.8		02	9	9	E	HOLL	4834	
31	DSD	0050	0300D	N21	W24	07	29.2		03	9	9	E	PALE	4833	
31	ASR	0052E	0103D	N16	W90	07	24.2	1		7	6	E	HOLL	4825	
31	ASR	0110E	0256D	N15	W90	07	24.2			5	6	E	PALE	4825	
31	BSL	0503	0902	S20	W90	07	24.3	1				C	ABST		
31	APR	0503	0902	S41	W90	07	23.8	1				C	ABST		
31	AFS	0550E	1637D	N16	E07	07	31.8		03	9	9	E	SVTO	4834	
31	ADF	0553E	1637D	S26	W54	07	27.0		08	9	9	E	SVTO	4827	
31	AFS	0555E	1637D	N31	W11	07	30.4		02	9	9	E	SVTO	4836	
31	ASR	0931E	1503D	N15	W90	07	24.6			9	9	E	SVTO	4825	
31	AFS	1118E	1637D	N19	W27	07	29.4		02	9	9	E	SVTO	4833	
31	ADF	1404E	1750D	S28	W55	07	27.3	1	09	9	9	E	RAMY	4827	
31	AFS	1525E	0104D	N15	E02	07	31.8		02	9	9	E	HOLL	4834	
31	AFS	1546E	1637D	N16	E01	07	31.7		02	9	9	E	SVTO	4834	
31	AFS	1738E	0416D	N16	E00	07	31.7		01	9	9	E	PALE	4834	
31	DSD	1900E	2000D	N15	E00	07	31.8	1	02	9	9	E	HOLL	4834	
31	AFS	2335E	0931D	N15	W03	07	31.7		03	9	9	E	LEAR	4834	
31	ADF	2335E	0931D	N28	W24	07	30.1	1	05	9	9	E	LEAR	4831	

ADF = Active Dark Filament
AFS = Arch Filament System
APR = Active Prominence
ASR = Active Surge Region
BSD = Bright Surge on Disk
BSL = Bright Surge on Limb
CAP = CAP Prominence (Tandberg-Hanssen)
CRN = Coronal Rain
DSD = Dark Surge on Disk
EPL = Eruptive Prominence on Limb
LPS = Loops
MDP = Mound Prominence
SDF = Sudden Disappearing Filament
SPY = Spray
SSB = Solar Sector Boundary

For SOLAR SECTOR BOUNDARY REPORTS, the latitude field contains the Carrington longitude of the point where a neutral line crosses the solar equator. The comments field may contain the Carrington longitude and central meridian distance of two more intersection points.

The EXTENT field for limb events is the radial extent above the limb in hundredths of solar radius. For disk events this field contains the heliographic extent in whole degrees.

C O N T E N T S

Comprehensive Reports **MISCELLANEOUS DATA** Number 521 Part II

GOES S O L A R X-RAY F L A R E S

Preliminary Listing

May 1984

Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	Opt	Imp	Xray	NOAA/ USAF Region
01	0021	0307	0130	S14	W32	2B	M4.0		4474
01	0507	0506	0509	S13	W47	SB	C6.1		4474
01	0611	0617	0611	S17	W47	SB	C4.1		4474
01	0816	0825	0817				C1.5		
01	1013	1018	1016				C1.8		
01	1219	1229	1223				C2.6		
01	1759	1808	1801	S11	W41	SF	C1.0		4474
01	1859	1913	1859	S16	W51	SN	C1.8		4474
01	1946	1952	1949				C1.0		
01	2012	2030	2029				C1.3		
01	2318	2356	2324	S11	W54	SN	C2.1		4474
02	0345	0350	0345	S15	W56	SN	C1.1		4474
02	0744	0805	0748	S15	W49	SF	C1.1		4474
02	1146	1236	1215				C3.5		4476
02	1438	1538	1502	S13	W53	SF	C2.7		4474
02	1604	1711	1615	S13	W54	SB	C7.9		4474
02	1829	1839	1835	S16	W43	SF	C1.9		4474
02	1915	2144	1933	S07	W60	SB	M3.0		4474
03	0314	0334	0321	S12	W67	SB	C7.1		4474
03	0425	0427	0425	S15	W45	SF	C1.5		4476
03	0721	0757	0749	S18	W60	1N	C1.3		4474
03	1057	1136	1105	S10	W44	SN	C1.1		4476
03	1252	1321	1305	S17	W76	SN	C1.1		4474
03	1600	1638	1614	S09	W46	SN	C1.8		4476
03	1928	1945	1934	S09	W49	SF	C1.1		4476
03	2334	0101	2349	S11	W72	SN	C3.6		4474
04	0315	0331	0319	S11	W50	SF	C1.7		4476
04	0605	0638D	0606	S13	W71	SB	C3.3		4474
04	1248	1304	1250				C1.3		
04	1344	1356	1347				C1.9		
04	1604	1659	1617				M1.3		4474
04	2333	2348	2335	S09	W63	SB	C2.8		4476
04	2341	0001	2347				C3.7		
05	0104	0114	0109				C4.7		
05	0242	0252	0249				C2.7		
05	0358	0404	0400				C3.3		
05	0634	0650	0641				C8.2		
05	0841	0856	0853				C4.4		4480
05	0938	0944	0941				C4.0		
05	1116	1255	1207				M7.1		4481
05	1615	1622	1618				C8.7		
05	1808	1849	1827				M7.5		4474
06	0025	0048	0042				C2.7		
06	0130	0141	0135				C5.3		
06	0142	0153	0146				C5.5		4481
06	0217	0224	0221				C2.5		4481
06	0413	0425	0416	N06	E83	SF	C2.4		4481
06	0458	0510	0503				C2.2		
06	0629	0634	0631				C1.7		
06	0722	0731	0725				C2.0		
06	0819	0829	0825				C3.5		4481
06	1033	1038	1036				C1.9		
06	1112	1118	1115				C2.0		
06	1215	1229	1226				C2.5		
06	1347	1405	1349				C1.8		
06	1504	1511	1507				C1.9		4481
06	1517	1538	1523				C3.8		4481
06	1619	1642	1625	N07	E87	SB	C3.1		4481
06	1808	1816	1812				C1.2		
06	1905	1922	1911	N06	E78	SN	C3.8		4481
06	2106	2121	2116				C1.1		
06	2216	2241	2238				C2.2		4476
06	2316	2326	2321				C2.2		
07	0055	0100	0058				C2.0		
07	0207	0212	0210				C1.7		
07	0328	0334	0331				C1.4		
07	0413	0444	0432	N06	E68	1N	C2.7		4481
07	0519	0530	0525				C1.8		
07	0648	0705D	0655	N06	E69	SN	C2.2		4481
07	0736	0743	0739				C1.6		
07	0906	0924	0915				C2.2		
07	1237	1247	1237				C1.8		
07	1325	1347	1327	N07	E71	SF	C2.6		4481
07	1522	1528	1526				C1.6		
07	1636	1641	1639				C2.0		
07	2115	2121	2115	N04	E66	SF	B9.6		4481
08	0117	0131	0119	N08	E65	SN	C1.8		4481
08	0150	0236	0151	N05	E58	SB	C6.7		4481
08	0728	0740	0733				B8.3		
08	0747	0753	0750				B9.9		
08	0957	1004	1001				B9.9		
08	1031	1038	1034				C2.2		
08	1128	1138	1134				C4.6		
08	1605	1613	1609				C1.1		
08	1732	1736	1732	N06	E58	SF	C1.3		4481
08	1821	1833	1828				B7.7		
08	2029	2034	2031				B8.8		
08	2056	2118	2104	N08	E57	SB	C2.3		4481
08	2100	2104D	2104	N06	E51	SB	C4.3		4481
08	2117	2136	2125				C1.8		
09	0044	0051	0048				C1.0		
09	0640	0703	0655				C1.1		
09	0816	0823	0820				C1.4		
09	1007	1016	1011				B8.5		
09	1249	1256	1252				B8.1		
09	1359	1428	1415				C1.6		
09	1412	1443	1422				C1.5		
09	1414	1419	1417				C1.9		
09	1530	1535	1531	N08	E41	SN	C1.8		4481
09	1536	1626	1544	N12	E53	1B	C8.5		4481
09	2042	2047	2044	N01	E32	SN	C2.1		4481
09	2257	2301	2257	N07	E33	SN	C1.7		4481
10	0104	0153	0120	N08	E40	SN	C3.2		4481
10	0743E	0756	0747	N08	E34	SN	C2.1		4481
10	0817	0831	0820	N02	E25	SB	C1.4		4481
10	0845	0856	0852				C2.3		
10	0942	0947	0945				C1.5		
10	1017	1029	1027				C2.4		
10	1105	1153	1112	S13	W67	SN	C1.4		4484
10	1337	1348	1340				C1.4		
10	1455	1514	1500	N06	E27	SN	C1.9		4481
10	1529	1644D	1552	N09	E29	1B	C4.9		4481
10	1656	1703	1700				C3.7		
10	1720	1826	1751	N03	E21	2B	M4.7		4481
10	2159	2221	2219				C1.2		
10	2203E	2231	2227	N07	E24	SN	C1.9		4481
11	0551	0608	0559				C1.1		
11	0728E	0751	0732	N03	E12	1B	M1.8		4481
11	0821	0834	0829				C1.0		
11	0902	0909	0906				B8.9		
11	1034E	1045	1036	N03	E12	SN	C3.4		4481
11	1047	1052	1048	N06	E21	SB	M1.1		4481
11	1458	1503	1501				C1.8		
11	1516	1532	1526	N09	E24	SB	B9.3		4481
11	1522	1528	1526				C4.5		4481
11	1756	1810	1803				C1.0		
11	1923	2002	1951	N04	E07	SN	C2.0		4481
11	1947	1955	1952				C3.2		4481
11	2027	2154	2052	N05	E09	1N	C7.2		4481

GOES S O L A R X-RAY F L A R E S

Preliminary Listing

May 1984

Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	Opt	Imp Xray	NOAA/ USAF Region
12	0005	0012	0005	N07	E15	SF	B9.2	4481
12	0012	0025D	0017	N07	E11	SN	C1.8	4481
12	0329	0335	0332				B7.4	
12	0354	0403	0354	N10	E11	SN	C1.1	4481
12	0532	0619	0542	N02	W02	1B	M1.3	4481
12	0757	0804	0801				C1.1	
12	0903	0915	0910				B9.2	4481
12	1007	1026	1009	N03	W01	SB	C7.4	4481
12	1257	1348	1259	N03	W02	SB	C2.2	4481
12	1422	1435	1423	N04	W04	SB	C2.1	4481
12	1539	1617	1544	N04	W04	SF	B9.5	4481
12	1652	1732	1711	N06	W00	SN	C1.0	4481
12	1710	1734	1711	N06	W06	SN	C1.1	4481
12	1940	1942D	1941	N09	E02	SN	C1.1	4481
12	2104	2123	2116				B9.1	
12	2314	2334	2323	N04	W09	SF	C2.0	4481
13	0000E	0107	0041	N08	E05	SB	C1.3	4481
13	0338	0457	0443	N09	W01	SN	C1.0	4481
13	0529	0538	0531				B8.0	
13	0751	0757	0755				C1.8	
13	1015	1029	1018				C1.0	
13	1423	1452D	1426	N08	W07	SN	C1.6	4481
13	1458	1508	1504				C1.2	
13	1549	1559	1552				C1.7	4481
13	1742	1817	1750	N05	W17	SF	C1.9	4481
13	2013	2023	2017	N06	W17	SF	B8.7	4481
13	2231	2251	2244				B9.4	
14	0314	0336	0332				C1.1	
14	0552	0605	0557				C1.9	
14	1214	1227	1222				C1.2	
14	1617	1700D	1650	N04	W31	SN	B9.2	4481
14	1759	1927	1815	N04	W32	1B	C1.1	4481
14	1800	1858	1803	N04	W31	SB	C3.4	4481
14	2049	2111D	2054	N06	W21	SF	B8.7	4481
14	2219E	2237	2220	N05	W30	SB	C3.6	4481
14	2255	2300	2258				C1.3	
14	2312	2330	2318	N07	W21	SN	C2.4	4481
15	0003	0013	0007				C1.3	
15	0102	0110	0102	N07	W22	SN	C1.9	4481
15	0220	0244	0222	N08	W24	1B	C4.8	4481
15	0448	0513	0458				C4.2	
15	0523	0531	0528				C2.0	
15	0621	0653	0645				C2.1	
15	0956	1002	0959				B7.1	
15	1619	1639	1630	N08	W34	SB	C1.1	4481
15	1659	1734	1704	N04	W43	1B	C4.9	4481
16	0032	0051	0038				C2.1	4481
16	0109E	0132	0117	N03	W46	SF	C1.8	4481
16	0511	0521	0516				C1.1	
16	0526E	0539D	0527	S12	W42	SB	C1.9	4485
16	1010	1024	1015				C1.7	
16	1208	1219	1211	N03	W52	SB	C1.7	4481
16	1328	1333D	1331	S12	E51	1B	C1.9	4490
17	0431	0437	0434				B9.1	
17	0548	0603	0558				C1.2	
17	1240	1304	1256	N08	W62	SN	C1.2	4481
17	1442	1614	1443	N05	W60	SN	C2.0	4481
17	1526	1536	1532				C2.2	
17	1621	1645	1629	N04	W66	SF	C1.7	4481
17	1816	1831	1826				C2.4	
17	1835	1849	1840				C3.2	
17	2115	2122	2118				C1.8	
17	2250	2313	2258	S12	E32	SF	C1.7	4490
18	0158	0224	0212				C9.1	4492
18	0224	0247	0228				M1.7	4492
18	0444	0500	0458				C3.8	
18	0532	0538	0533				C2.2	
18	0606	0614	0611				C2.1	
18	0704	0709	0707				C2.4	
18	0750	0930	0845				C6.2	
18	0932	0948	0937				C5.3	
18	1158	1244	1213				C3.8	
18	1300	1327	1313				M1.5	
18	1402	1435	1419				C9.9	4492
18	1856	1910	1903				C2.9	4492
18	1919	1940	1927				C4.2	4492
18	2340	2353	2347				C2.5	
19	0041	0049	0042	N05	W82	SN	C2.3	4481
19	0227	0232	0230				C2.0	
19	0304	0356	0331				C5.2	
19	0610	0620	0613				C2.2	
19	0648	0704	0658				C2.3	
19	0732	0742	0736				C3.6	
19	0749E	0752	0750	N06	W86	1N	M1.0	4481
19	1031	1041	1038				C5.1	4492
19	1126	1136	1129				C2.7	
19	1159	1209	1205				C4.2	
19	1202	1208	1205				C4.1	
19	1731	1745	1732	S08	E82	SF	C4.0	4494
19	1806	1845	1830				C2.4	
19	1910	2021	1954	S12	E84	SN	C2.5	4492
19	1930E	1946	1932	S14	E10	SN	C2.9	4490
19	2030	2104	2038	S10	E68	SN	C6.3	4492
19	2151	2200D	2200	S07	E67	2B	X4.1	4492
20	0017E	0122	0041	S09	E79	SF	C5.2	4494
20	0126	0203	0127	S10	E65	1B	M2.9	4492
20	0402	0418	0408				M1.0	4492
20	0246E	0326	0303	S08	E64	SB	M4.6	4492
20	0529	0601	0543				M5.4	4492
20	0616	0625	0620				M1.2	4492
20	0820	0825	0823				C3.7	
20	0854	0916	0906				C8.0	
20	1011	1031	1022				C4.9	
20	1114	1131	1120				C4.1	
20	1332	1351	1339				C5.2	
20	1514	1518D	1515	S12	E58	SB	C7.6	4492
20	1637	1646	1640				C2.1	
20	1746	1806	1804	S08	E57	SF	C1.9	4492
20	1929	1937	1929	S12	E56	SN	C4.9	4492
20	2019	2024	2019	S11	E58	SB	C2.4	4492
20	2150	2204	2154	S09	E47	SB	C5.7	4492
20	2218	0037	2241	S09	E52	2B	X10.1	4492
21	0218	0357	0326				M5.7	
21	1146E	1154	1148	S13	E32	SN	C2.8	4492
21	1328	1355	1331	S10	E45	SN	C2.5	4492
21	1401	1424	1404	S08	E44	1B	C9.3	4492
21	1540	1546	1543				C3.3	
21	1610	1638	1621	S07	E42	SN	C8.5	4492
21	1746	1802	1748	S12	W19	SN	C8.5	4490
21	1757	1815	1802				C9.7	4490
21	1936	2131	2027	S06	E40	2B	X2.7	4492
22	0251	0330	0254	S11	E38	SB	C5.9	4492
22	0440	0446	0440	S08	E37	SB	C3.1	4492
22	0527	0703	0635	S09	E31	1B	C2.0	4492
22	0626	0649	0638				M1.4	4492
22	0802	0819	0806	S08	E35	SB	C1.9	4492
22	0928	0940	0929	S09	E34	SB	C2.4	4492
22	1110	1116	1114				C2.9	
22	1453	1616	1501	S09	E24	2B	M6.3	4492
22	1734	1746	1740				C1.9	

GOES S O L A R X-RAY F L A R E S

Preliminary Listing

May 1984

Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	Imp Opt	Xray	NOAA/ USAF Region
22	0251	0330	0254	S11	E38	SB	C5.9	4492
22	0440	0446	0440	S08	E37	SB	C3.1	4492
22	0527	0703	0635	S09	E31	1B	C2.0	4492
22	0626	0649	0638				M1.4	4492
22	0802	0819	0806	S08	E35	SB	C1.9	4492
22	0928	0940	0929	S09	E34	SB	C2.4	4492
22	1110	1116	1114				C2.9	
22	1453	1616	1501	S09	E24	2B	M6.3	4492
22	1734	1746	1740				C1.9	
23	0257	0307	0257	S07	E25	SN	C1.2	4492
23	0454	0531	0512	S08	E24	1B	M1.8	4492
23	1217E	1240	1226	S12	E12	SN	C2.2	4492
23	1251	1304	1257				C1.4	
23	1601	1703D	1643	S10	E09	SB	C1.7	4492
23	2017	2036	2019	S09	E08	SF	B8.3	4492
23	2325	2400D	2348	S11	W00	1B	C1.3	4492
23	2343	2400	2352				C5.9	4492
24	0153	0207	0157				C1.1	4492
24	0411	0416	0413				B7.8	
24	0527	0536	0531				B9.9	
24	0657	0711	0702				C3.5	
24	0939	0947	0942				B8.1	
24	0956	1014	0957	S07	E10	1N	C7.7	4492
24	1247	1339	1248	S11	W01	SN	C1.9	4492
24	1448	1516	1451	S08	E05	SB	C2.1	4492
24	2256	2314	2300				B6.5	
25	0422	0436D	0427	S08	W03	1N	C2.5	4492
25	0841	0928	0846	S07	W07	SB	M1.7	4492
25	1359	1415	1406				C1.0	
25	1453	1546D	1500	S12	W20	1N	C3.2	4492
25	1638	1820	1710	S10	W17	1N	C1.9	4492
25	1816	1844	1820	S07	E02	SF	C1.0	4494
25	1958	2036	2000	S07	E00	1N	C2.2	4494
25	2125	2215	2134	S11	W24	1B	C5.4	4492
26	0005	0101	0009	S06	W14	SN	B9.8	4492
26	0052	0057	0055				B7.7	
26	0142	0156	0146				B9.5	4492
26	0243	0252	0243	S08	W19	SB	C1.2	4492
26	0356	0416	0357	S11	W02	SN	C1.0	4494
26	0535	0559	0535	S09	W16	SN	B8.8	4492
26	0606E	0621D		S08	W21	SB	C6.4	4492
26	0727	0751	0729	S10	W29	SB	C1.0	4492
26	1137	1202	1138	S11	W30	SN	C1.0	4492
26	1214	1252	1229	S12	W32	SN	C2.5	4492
26	1315	1442	1320	S13	W31	1N	C5.0	4492
26	1406	1411	1409				C1.8	
26	1755	1810	1801				C1.0	
26	1906	1929	1911	S08	W23	SN	C2.0	4492
26	1921	1926	1924				C2.0	4492
26	2339	2351	2339	S11	W35	SN	B8.6	4492
27	0930	1007	0941				B6.0	
27	1553	1603	1553	S11	W44	SN	B4.6	4492
27	1958	2026	2026				C1.1	4492
27	2225	2243	2238	S10	W52	SF	B7.3	4492
28	0000	0040	0007	S17	E05	SF	B7.8	4499
28	0953	1016	1001				C1.7	
28	1714	1731	1716	S07	W39	SN	B7.5	4494
28	1922	1954	1930	S11	W59	SF	B7.9	4492
28	2220	2225	2223				B6.9	4500
29	0012	0024	0016	S10	E49	SN	B8.6	4500
29	0016	0023	0021				C2.6	4500
29	0034	0115	0038	S13	W60	SN	C1.1	4492
29	0908	0924	0912				B8.3	
29	1742	1828	1744	S17	W19	1N	C1.2	4499
29	1847	2001	1855	S25	E75	SF	C1.8	4506
30	0159	0209	0204				B6.0	
30	0534	0547	0541				B7.7	
30	1010E	1033	1015	N21	E35	SN	B6.2	4504
30	1726	1750	1727	S13	E18	1B	C2.2	4500
30	1955	2021	1957	S13	E16	SN	C1.3	4500
31	0551	0602	0555				C1.8	4500
31	0624	0631	0627				B9.4	
31	0836	0901D	0844	N21	E25	SN	C2.0	4504
31	1129	1156	1142				M1.7	4492

GOES S O L A R X-RAY F L A R E S

Preliminary Listing

June 1984

Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	Imp	Opt	Xray	NOAA/ USAF Region
01	0626	0645	0627	S17	E09	SN		B9.6	4500
01	1039E	1203		N21	E08	1N		C3.6	4504
01	2057	2103	2100					B6.8	
01	2238	2249	2244					B4.2	
01	2254	2304	2301					B3.9	
01	2303	2316	2306	S10	W09	SF		C4.9	4500
02	0039	0044	0042					B7.2	
02	1248	1313	1303					C2.4	
03	0146	0244	0149	S10	W24	1N		C2.6	4500
03	0829	0856	0853					C1.3	4500
03	1453	1557	1523	N21	W21	SF		B5.2	4504
03	1517	1545	1527					B6.0	4504
03	1807	1856	1819					B9.2	
04	0648	0720	0650	S15	W39	SF		B6.0	4500
05	0011	0022	0017					B8.6	
05	0202	0255D	0215	S12	W53	1N		C3.4	4500
05	1439	1446	1444					B3.1	
05	1948	2000	1953					B5.6	
07	0125	0133	0129					B4.3	4500
07	1439E	1514	1452	S09	W64	SN		C4.0	4500
07	1919	1947	1937					B6.8	
08	2310	2340	2311	N04	W04	1B		C4.5	4508
09	1008	1019	1013					B3.3	
10	0441	0455	0449					B4.2	
10	2105	2109	2105	S12	E40	SN		B3.2	4509
10	2153	2206	2154	S13	E39	SN		B2.6	4509
11	1625	1630	1628					B2.1	
12	1818	1840	1821	S07	E50	SN		B4.4	4511
12	2108	2152	2151					B7.3	
14	0707	0718	0710					B6.3	
14	0902	0918	0908					C1.3	
14	1454	1518	1456	S12	W13	SB		C1.9	4509
14	1556	1617	1559	S06	E52	SF		B9.8	4513
14	1619	1629	1623					C1.9	
14	1657	1748	1730					C2.9	
14	1818	1838	1829					C2.3	
14	2011	2020	2015					C5.1	
14	2121	2157	2147					C5.2	4513
15	0021	0030	0024					B9.6	
15	0116	0126	0120					B9.8	
15	0215	0221	0218					B8.6	
15	0353	0404	0400					B9.4	
15	0413	0428	0418					C2.1	
15	0606	0616	0609					B9.7	
15	0850	0903	0855	S06	E43	SN		B9.2	4513
15	1020	1050	1026	S08	E44	SN		C2.1	4513
15	1224	1234	1227					B8.6	
15	1244	1305	1246	S08	E42	SN		C1.4	4513
15	1432	1501	1434	S07	E42	SN		C1.0	4513
15	1649	1703	1656					B8.9	
15	1823	1828	1827					B6.7	
15	2034	2044	2039					C2.0	
16	0323	0332	0327					C5.1	
16	1448	1457	1452					B4.3	
17	0456	0542	0502	S09	E21	SF		B5.8	4513
17	0815	0832	0822					B5.1	
17	1054	1059	1057					B5.7	
17	1653	1837	1727					B5.8	4513
18	1038	1048	1043					B4.2	
19	0111	0136	0117					B5.3	
20	0211	0223	0216					B4.7	
20	0524	0547	0530					B7.0	
20	0643	0655	0649					B8.9	
20	0826	0838	0831					B5.2	
20	1839	1900	1846	S07	W19	SN		B5.0	4519
20	2028	2034	2032					B8.9	4520
20	2242	2315	2249	S06	W28	SB		B8.5	4513
21	1344	1505	1351	S05	W32	1N		C2.7	4519
21	1911	1918	1912	S06	W35	SN		B3.5	4519
21	2150E	2159	2152	S05	W43	SN		B6.6	4513
22	0339	0346	0340	S09	W38	SN		B3.4	4519
22	1357	1518	1501	S15	E15	SN		B6.9	4520
22	1456	1504	1500					B8.2	4520
22	2034	2109	2043	S15	E12	SN		B5.0	4520
22	2141	2146	2144					B3.5	4520
23	0049	0054	0050	S15	E11	SF		B2.9	4520
23	0128	0154	0132	S15	E11	SN		B4.4	4520
23	0311	0320	0313	S15	E10	SF		B4.1	4520
23	0349	0417	0356	S06	W60	SF		B9.6	4513
23	0507	0514	0507	S15	E09	SN		B5.7	4520
23	0528	0550	0532	S15	E08	SN		C1.2	4520
23	0629	0646	0630	S15	E08	SN		C1.9	4520
23	0733	0810	0735	S06	W62	SN		B9.5	4513
23	1201	1215	1208					C1.0	
23	1311	1316	1314					B4.0	
23	1916	1921	1916	S12	W69	SN		B5.2	4513
23	1925	1940	1935	S10	W71	SF		B6.6	4513
24	2313	2331	2324					B4.4	
25	1623	1714	1642					B3.3	
25	2056	2120	2056	S17	W30	SB		B9.0	4520
26	0102	0112	0103	S15	W32	SF		B3.4	4520
26	0752	0802	0757					B5.2	
27	0755	0807	0759					B5.5	
27	0827	0849	0848					B8.5	
27	1804	1816	1813					C4.7	
27	2220	2230	2224					C2.2	
28	0227	0244	0233					B7.4	
28	1617	1635	1620	N12	E81	SF		C1.3	4525
29	1752	1805	1759					B7.6	
30	0002	0018	0008					C2.1	
30	0954	1009	0959					B6.1	
30	1104	1122	1104	N14	E61	SN		B6.7	4525
30	1311	1405	1314	N15	E62	SN		C1.3	4525
30	1554	1559	1557					B6.1	

GOES S O L A R X-RAY F L A R E S

Preliminary Listing

July 1984

Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	Imp	Opt Xray	NOAA/ USAF Region
02	1827	1849	1828	N12	E33	SF	C1.6	4525
04	0051	0413D	0246	S08	E68	2B	M1.4	4532
04	0805	0815	0809				B7.6	
05	1327	1337	1332				B5.8	
05	1504	1528	1518				C3.1	
05	1748	1752D	1749	N02	E52	SB	B8.0	4533
06	1905	1935	1912	N09	E17	SN	B4.1	4528
06	1936	1952	1938	N17	W21	SF	B5.1	4525
06	2128	2135	2132				B2.7	
07	1027	1123	1044				B7.1	
07	1336	1402	1338	S07	E25	SF	B4.7	4532
07	1450	1520	1456	N10	W33	SF	B5.7	45
07	2116	2128	2118	N03	E21	SN	B4.4	4533
07	2356	0032	0001	N12	W37	SF	B8.6	4525
08	0658	0708	0703				B6.0	
08	0700	0706D	0702	S11	E10	SN	B6.0	4532
08	1030	1041	1037				B5.9	
08	1221	1228	1225				B5.2	
08	1819	1851	1829	S08	E09	SF	B5.0	4532
08	2350	0000	2355				B3.6	
09	2240	2348	2325				C1.2	
10	0328	0340	0334				B3.3	
10	0535	0542	0539				B5.4	
10	0632	0656	0643				B6.9	
10	0821	0828	0824				B4.8	
10	0835	0842	0839				B5.0	
10	1911	1917	1915				B3.4	
10	2057	2107	2103				C1.2	
11	0341	0347	0343				B5.5	
11	0901	0915	0903	S17	E71	SN	B7.8	4541
11	0941	0949	0944				B4.1	
11	1526	1534	1530				B3.3	
12	1913	1955	1925				B2.5	4541
12	2028	2114	2046				B2.4	
12	2312	2317	2315				B2.2	
13	1052	1057	1055				B2.8	
13	2152	2236	2156	S05	E20	SN	B5.5	4539
14	0108	0119	0113	S08	E18	SF	B2.3	4539
14	0635	0646	0642	S06	E14	SF	B2.9	4539
14	0928	0935	0932				B2.7	
14	1422	1524	1452				B7.4	4532
14	2015	2026	2018	N01	W63	SN	B3.3	4533
14	2101	2113	2101	N00	W64	SF	B4.2	4533
15	1632	1655	1642				B2.0	
16	1025	1033	1029				B2.5	
16	1125	1138	1128				B1.1	
17	0059	0131	0102	S10	W63	1B	C5.6	4537
17	1655	1702	1658				B1.0	
17	1941	1955D	1947	S14	W03	SN	B5.2	4541
18	1155	1235	1220				B9.3	4537
19	0852	0904	0859				B1.2	
19	1304	1328	1312				B0.4	
19	1502	1647	1552				B1.5	4544
19	1853	1922	1900				B1.0	
19	2040	2051	2044				B1.0	
20	0126	0137	0132				B1.8	
20	0320	0333	0328	N11	W73	SF	B1.2	4544
20	1702	1710	1707				B1.5	
20	1823	1833	1828				B1.7	
20	1840	2018D	1841	S07	E03	SF	B2.1	4545
20	2104	2110	2105	S07	E02	SB	B5.0	4545
20	2256	2316D	2301	S10	E05	SF	B3.5	4545
21	0001	0009	0006				B2.2	
21	1654	1701	1658				B2.0	
22	0015	0021	0018				B2.0	
22	0807	0812	0810				B2.0	
22	0945	1009	0956				B2.1	
22	1025	1048	1035				B2.2	
22	1723	1751	1727	S08	W23	SF	B2.2	4545
22	1800	1808	1803				B1.7	
23	0822	0830	0826				B1.9	
23	1824	1834	1824	S17	E63	SF	B1.8	4549
24	0600	0609	0605				B1.4	
24	1722	1728	1725				B1.7	
27	0021	0029	0026				B1.2	
30	0842	0848	0846				B1.6	
30	1550	1615	1551	S17	W28	SF	B1.1	4549
30	1738	1758	1743	S18	W30	1N	B5.5	4549
31	2312	2319	2316				B1.0	

GOES SOLAR X-RAY FLARES

Preliminary Listing

August 1984

Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	Imp	Opt	Xray	NOAA/ USAF Region
02	0402	0407	0405					B1.6	
02	0705	0731	0719					B9.8	
03	0236	0252	0242					B2.5	
03	2123	2131	2126					B1.7	
03	2208	2227	2218					B2.7	
04	0327	0335	0328	S17	E14	SF		B2.8	4552
04	0548	0557	0553					B3.3	
04	1827	1832	1830					B1.3	
04	1920	1944	1928					B1.5	
04	2011	2018	2012	S17	E05	SF		B3.9	4552
05	0800	0817	0801	N06	E61	SF		B5.3	4554
05	1401	1410	1401	N07	E60	SF		B3.0	4554
05	2349	2354	2352					B2.4	
06	0047	0058	0047	N07	E55	SN		B7.9	4554
06	0430	0434	0430	N07	E53	SF		B2.7	4554
06	0713	0721	0717					B1.5	
06	1601	1638	1627					B1.9	
06	1859	1908	1901	N13	W70	SF		B1.8	4557
06	2120	2315	2146					B2.4	
07	0003	0017	0006	N08	E43	SF		B2.8	4554
07	0047	0143	0113					B2.3	
07	0421	0506	0435					B2.1	
07	1220	1325	1241					B1.9	
07	1827	1840	1827	N08	E32	SF		B1.3	4554
07	2143	2240	2208					B2.1	4556
08	0609	0614	0612					B2.2	
10	0718	0726	0718	N11	W75	SF		B2.0	4558
11	0612	0617	0615					B2.2	
12	0413	0431	0420					B1.6	
12	0927	0950	0933					B2.0	
12	1130	1141	1134					B1.7	4554
13	2106	2119	2112					B2.9	
13	2340	2345	2343					B1.9	
14	0651	0736	0653	N09	W55	SF		C1.0	4554
14	1225	1255D	1229	N08	W58	SF		B4.3	4554
14	1815	1851	1822	N08	W60	SF		B6.2	4554
14	2057	2102	2100					B1.3	
14	2353	0021	0001					B9.4	4554
15	0112	0135	0117	N07	W64	SF		B7.8	4554
15	0930	0950	0942					B2.5	
15	1054	1116	1102					B1.9	
15	1601	1612	1602	N07	W73	SF		B5.2	4554
16	0010	0038	0018					B2.4	
16	0541	0603	0550					B3.6	
16	0752	0811	0802					B3.3	
16	2135	2144	2140					B1.4	
17	1047	1102	1054					B2.8	4563
17	1511	1524	1519					B1.9	
17	1610	1726	1705	N03	W76	SF		B1.4	4563
18	0453	0506	0459					B1.9	
18	0543	0608	0559					C1.0	
18	0906	0918	0914					B6.1	
18	0940	0949	0944					B4.8	
18	1113	1130	1119					B3.3	
18	1240	1255	1245					B6.1	
18	1408	1417	1412					B3.5	
18	1444	1454	1451					B4.1	
18	1706	1715	1710					B2.0	
18	1820	1831	1825					B4.4	
18	1954	2004	2000					B3.3	
18	2159	2218	2206					B7.9	
18	2202	2215	2206					B7.7	
18	2239	2327	2305					M1.1	
19	0200	0234	0222					C2.1	4563
19	0339	0406	0347					C1.7	
19	0617	0638	0628					B6.1	
19	1009	1035	1019					B1.6	
19	1137	1158	1147					B1.7	
20	0521	0526	0531					B1.0	
20	0646	0718	0706					B4.5	
20	1433	1447	1442					B8.2	
21	1359	1439	1435					B9.2	
21	2136	2148	2143					B3.1	
22	0115	0122	0119					B0.6	
22	0734	0744	0740					B1.1	
22	0800	0810	0806					B0.9	
22	0855	0901	0859					B0.7	
22	1347	1413	1359					B1.7	
22	1617	1625	1621					B0.7	
22	2100	2123	2116					B1.1	
22	2138	2213	2155					B1.5	
24	0526	0535	0530					B0.5	
24	0803	0848	0809					B1.3	
24	1029	1049	1037					B1.4	
24	1159	1218	1208	S14	W00	SN		B4.4	4565
24	1257	1311	1300	S14	W01	SF		B1.0	4565
24	1436	1500	1453					B7.0	4565
24	1626	1714	1627	S13	W04	SF		B2.3	4565
24	1739	1752	1739	S13	W05	SN		B3.9	4565
24	1850	1904	1850	S14	W06	SF		B2.2	4565
24	1906	1922	1915	S14	W05	SF		B2.3	4565
24	2054	2120	2105	S14	W07	SB		C1.1	4565
24	2219	2243	2226	S13	W08	SF		B1.2	4565
25	0058	0123	0102	S13	W10	SF		B2.2	4565
25	0207	0257	0227	S14	W09	SF		B2.3	4565
25	0412	0438	0416	S13	W11	SF		B1.7	4565
25	1311	1322	1313	S06	E72	SN		B2.3	4567
25	1458	1525	1513					B3.2	
25	1551E	1601	1553	S08	E72	SN		B3.4	4567
25	1909	1933	1924					B2.5	
25	2009	2016	2021					B2.7	
25	2032	2039	2035					B3.0	
25	2203	2214	2209					B3.4	
25	2221	2232	2229					B2.4	
26	0115	0133	0115	S05	E64	SN		B6.5	4567
26	0205	0241	0216	S06	E63	SB		C3.5	4567
26	0412	0422	0420					B3.3	
26	0524	0543	0527	S06	E62	SN		C2.0	4567
26	0840	0915	0850	S05	E64	SB		C2.0	4567
26	1050	1056	1054					B7.9	4567
26	1217	1339	1225	S05	E58	SF		B5.6	4567
26	1524	1549D	1534	S06	E57	SF		B2.7	4567
26	1721	1738	1726					B4.0	4567
26	2010	2015	2013					B3.8	4567
26	2032	2037	2033	S12	W36	SF		B4.1	4565
27	0026	0035	0027	S08	E52	SF		B3.6	4567
27	0143	0151	0144	S07	E51	SF		B6.7	4567

GOES SOLAR X-RAY FLARES

Preliminary Listing

August 1984

Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	Imp	Opt	Xray	NOAA/ USAF Region
27	1428	1435	1429	S06	E44		SF	B2.1	4567
27	1523	1532	1524	S13	W46		SF	B3.9	4565
27	1825	1831	1828					B4.5	
27	1909	1934	1921	S07	E42		SN	B6.2	4567
27	2116	2133	2129					C1.0	
27	2204	2211	2204	S06	E39		SN	B6.3	4567
27	2242	2259	2248					B4.2	
27	2307	2315	2311					B6.0	
28	0047	0058	0049	S06	E38		SF	B2.4	4567
28	0122	0128	0126					B2.9	
28	0506	0516	0512					B2.2	
28	0645	0708	0656	S04	E32		SF	B2.7	4567
28	0742	0746	0742	S13	W55		SF	B2.5	4565
28	0806	0814	0810					B3.3	
28	1350	1355	1351	S07	E31		SF	B2.3	4567
28	1520	1534	1526					B2.6	
28	1811	1823	1817					B1.6	
28	1949	2036	2002	S14	W63		SN	B3.0	4565
28	2145	2213	2153	S14	W62		SF	B4.4	4565
28	2344	2400	2357					B2.4	4567
29	0040E	0053	0044	S06	E24		SF	B2.5	4567
29	0132	0141	0137					B3.5	
29	0157	0210	0203					B4.6	
29	0214	0225	0219					B7.6	
29	0712	0724	0717					B2.1	
29	0829	0838	0833					B2.4	
29	1017	1024	1021					B2.1	
29	1406	1411	1409					B1.8	4567
29	1410	1431	1423					B1.7	4567
29	1924	1930	1927					B2.1	
30	0456	0505	0501					B1.4	
30	0613	0657	0625					B1.5	
30	0725	0742	0728					B1.3	
30	1059	1123	1109					B1.9	
30	1448	1459	1452					B2.4	
30	1507	1522	1512					B2.2	
30	1742	1754	1747					B1.9	4567
30	1935	1943	1939					B2.3	4567
30	2212	2304	2245					B6.9	4565
31	0004	0126	0046					B2.2	4565
31	0137	0150	0137	S08	W03		SF	B5.0	4567
31	0221	0235	0228	S03	W07		1F	B4.7	4567
31	0316	0322	0319					B2.5	
31	0516	0526	0521					B2.2	
31	0620	0629	0625					B2.2	4567
31	1034	1053	1044					B5.4	
31	1657	1707	1700					B1.8	
31	1931	1950	1940	S07	W13		SF	B2.6	4567
31	2354	2359	2357					B1.8	

GOES S O L A R X-RAY F L A R E S

Preliminary Listing

September 1984

Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	Opt	Imp Xray	NOAA/ USAF Region
01	0102	0115	0109				B2.6	4567
01	0229	0248	0229	S07	W17	SF	B4.3	4567
01	0459	0525	0512				B2.5	
01	0810	0830	0810	S07	W19	SN	C1.0	4567
01	0844	0859	0850				B4.7	
01	1157	1204	1201				B2.8	
01	1353	1402	1357				B2.3	
01	1500	1511	1504				B1.9	
01	1625	1646	1635				B2.4	
01	2316	2325	2321				B2.3	
02	0147	0157	0152				B2.2	
02	0241	0249	0245				B3.1	
02	0721	0727	0724				B3.6	4567
02	0751	0821	0811				B2.4	
02	1010E	1103	1012	S07	W33	1B	C8.5	4567
02	2354	0002	2358				B3.1	
03	0357	0402	0358	S11	W08	SF	B2.3	4572
03	0559	0611	0606				B2.6	
03	0714	0722	0715	S08	W46	SF	B2.7	4567
03	0745	0803	0749	S11	W09	SF	B2.7	4572
03	0808	0820	0809	S07	W47	SF	B2.2	4567
03	0824	0835	0831				B2.2	
03	1132	1144	1138				B2.1	
03	2155	2204	2159				B3.8	
04	0014	0019	0017				B4.1	
04	0024	0027	0024	S05	W60	SF	B3.8	4567
04	0118	0124	0122				B5.3	
04	0425	0457	0430	S08	W59	SF	B8.8	4567
04	0814	0825	0816	S06	W65	SN	B2.7	4567
04	0858	0910	0903				B2.1	
04	1021	1030	1025				B4.2	
04	1823	1827	1824	N03	E21	SF	B2.0	4573
05	0646	0656	0648	S18	W70	SN	B4.2	4574
06	1951	2011	1954	N11	W65	SN	B6.2	4575
06	2137	2143	2140				B1.8	
06	2307	2314	2311				B1.8	
07	0240	0245	0243				B1.5	
07	0304	0324	0308				B1.7	
07	0734	0743	0735	N02	W15	SF	B3.1	4573
07	0857	0904	0900				B2.5	
07	0924	0935	0928				B2.5	
07	0949	0954	0952				B3.2	
07	1150	1158	1153				B1.8	
07	1314	1323	1321				B2.6	
07	1544	1551	1548				B1.2	
07	1604	1614	1607				B1.2	
07	1628	1659	1647				B2.0	
07	1731	1738	1734				B1.4	
07	1834	1839	1837				B1.7	
07	2246	2300	2252				B1.5	

Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	Opt	Imp Xray	NOAA/ USAF Region
08	0000	0005	0000				B2.0	4576
08	0131	0149	0139				B1.2	4571
08	0528	0550	0542				B1.4	
08	0559	0610	0603				B3.2	
08	0648	0708	0656				B1.4	
08	0721	0728	0722	S04	E49	SF	B1.3	4576
08	0738	0802	0745				B1.3	
08	0827	0834	0830				B1.2	
08	0849	0855	0852				B1.9	
08	0908	0922	0913				B2.0	
08	0929	0942	0935				B2.1	
08	0955	1013	1004				B1.8	
08	1135	1152	1141				B2.0	
08	1212	1237	1221				B1.9	
08	1310	1334	1313	S03	E47	SN	B5.2	4576
08	1540	1553	1550				B1.3	
08	1606	1619	1610				B1.5	
08	1656	1707	1700				B2.3	
08	1812	1819	1816				B2.4	
08	1919	1924	1922				B2.7	
08	1928	1946	1939				B3.9	
08	1956	2005	2001				B2.3	
08	2010	2051	2043				B6.4	
08	2111	2124	2119				C1.1	
08	2158	2204	2202				B3.4	
08	2235	2308	2259				B4.6	
08	2350	0004	2359				C2.2	
09	0144	0152	0148				B1.5	
09	0943	1002	0953				B7.2	
14	1748	1754	1752				B0.2	
15	0757	1301	0917				B0.4	
15	0804	0812	0807				B0.2	
15	1519	1524	1522				B0.1	
15	1525	1530	1528				B0.1	
15	1558	1618	1616				B0.2	
16	1528	1535	1533				B0.1	
18	1526	1532	1529				B0.2	
19	2224	2235	2230				B0.6	
21	0406	0419	0415	S05	E74	SF	B1.2	
23	0205	0216	0209				B0.6	
23	0230	0319	0256				B0.5	
23	0444	0449	0447				B0.4	
23	1230	1236	1233				B0.4	
23	2120	2149	2125				B0.4	
23	2211	2224	2222				B0.3	
23	2237	2243	2240				B0.3	
23	2257	2309	2307				B0.2	
23	2312	2320	2316				B0.2	
23	2333	2348	2345				B0.2	

GOES S O L A R X-RAY F L A R E S

Preliminary Listing

October 1984

Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	Imp	Opt	Xray	NOAA/ USAF Region
06	1234	1306	1251					B7.4	4582
06	2221	2230	2225					B0.4	
11	0610	0620	0615					B2.4	
13	1730	1735	1730	S03	W63		SF	B3.3	4582
14	1021	1031	1026					B0.5	
14	1148	1202	1157					B0.5	
15	2047	2116	2104					B3.1	
15	2151	2201	2156					B1.4	
15	2210	2219	2214					B1.1	
16	0016E	0058	0036	N04	E52		SN	B8.7	4586
16	0213	0218	0214	N05	E52		SF	B3.8	4586
16	0247	0303	0257					B1.7	
17	0632	0638	0636					B1.0	
17	0717	0727	0718	N02	E35		SF	B2.1	4586
18	2038	2044	2041					B0.5	
18	2048	2054	2051					B0.5	
18	2055	2105	2058					B0.5	
18	2110	2116	2114					B0.5	
19	0018	0029	0019	N05	E15		SF	B2.2	4586
20	0417	0429	0421					B1.2	
21	0228	0319	0236	N05	W19		SF	B6.7	4586
22	1319	1337	1320	N04	W36		SF	B1.3	4586
23	0210	0223	0216					B1.2	
23	1949	2004	1957					B1.0	
24	1752	1814	1754	N06	W68		SF	B4.3	4586
27	2020	2025	2023					B0.9	

GOES SOLAR X-RAY FLARES

Preliminary Listing

November 1984

Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	Imp	Opt	Xray	NOAA/ USAF Region
02	0201	0234	0203	S12	W36	SF	B4.2		4589
02	1302	1321	1317				B2.4		
02	1638	1716	1655				B1.3		
02	1738	1753	1746				B1.5		
03	0015	0033	0022				B0.6		
03	0039	0048	0043				B0.8		
03	1206	1217	1211				B1.1		
04	0016	0105	0045				B1.3		
04	0902	0909	0906				B1.4		
04	2146	2157	2151				B0.8		
04	2228	2259	2240				B1.9		
05	0418	0441	0427				B1.0		
06	1111	1140	1125				B2.3		
10	0432	0517	0439	N17	E14	1B	M2.1		4592
10	1305	1344	1318	N16	E11	SN	C1.8		4592
10	1827	1836	1829	N16	E06	SF	B1.6		4592
10	1948	2102	2007	N16	E05	1B	B0.3		4592
10	2001	2034	2010				M3.7		4592
11	0008	0014	0011				B1.0		
11	1623	1702	1637				B0.7		
11	2016	2024	2021				B1.4		
11	2035	2043	2041				B1.3		
11	2241	2322	2246	N17	W07	SN	C1.0		4592
12	0245	0249	0246	N18	W10	SN	B2.5		4592
12	0447	0452	0450				B0.5		
12	0551	0557	0554	N18	W12	SF	B2.2		4592
12	0952	1042	1017				C4.5		4592
13	2310	2317	2315				B1.1		
15	0934	0955	0945				B1.1		
15	1722	1829	1746				B0.9		
15	1914	1926	1920				B1.0		
16	0524	0559	0551				B0.4		
16	1356	1444	1424				B7.2		
17	2210	2218	2210	N09	W49	SF	B1.0		4596
18	0657	0724	0709				B3.2		4596
19	0944	0951	0947				B1.0		
19	1433	1441	1438				B1.0		
19	1928	1936	1932				B0.7		
19	2248	2258	2255				B0.7		
20	0537	0543	0540				B1.8		
20	0641	0653	0646				B0.6		
21	0156	0219	0206				B1.8		4597
21	0252	0300	0257				B1.3		
21	0418	0430	0424				B1.4		
21	1120	1133	1131				C3.8		
21	1238	1311	1252				B1.4		
21	1501	1512	1506				B1.5		
21	1806	1819	1814				B1.7		

Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	Imp	Opt	Xray	NOAA/ USAF Region
22	0358	0426	0408				B1.6		
22	0515	0523	0518	S12	E50	SF	B3.8		4598
22	1251E	1307	1251	N19	W40	SF	B2.7		4597
22	1327	2028	2015				B2.4		
22	1959	2024	2015				B2.3		
22	2346	2356	2350				B1.7		
23	1931	1955	1937				B1.0		
23	2006	2028	2016				B1.2		
23	2310	2315	2313				B1.4		
23	2330	2347	2336				B1.5		
24	0016	0026	0021				B1.3		
24	0140	0143	0140	S11	E29	SF	B1.3		4598
24	0510	0531	0525				B2.1		
24	0833	0856	0843	S11	E48	SF	B3.4		4600
24	0917	0945	0932	S11	E47	SF	B1.8		4600
24	0948	1005D	0955	S11	E47	SF	B2.4		4600
24	1234	1247	1243				B1.6		
24	1700E	1807D	0000	S11	E45	SF	B2.8		4600
24	1737	1743	1741				B2.9		4600
24	1744	1752	1747				B2.5		4600
24	1918	1933	1921				B1.5		
24	1937	1948	1945				B3.7		
24	2324	2332	2329				B1.9		
25	0204	0215	0208				B2.3		
25	0448	0455	0452				B2.3		
25	0511	0518	0516				B2.9		
25	0541	0611	0606				B3.9		
25	0652	0657	0652	S11	E38	SF	B2.6		4600
25	1310	1315	1313				B1.4		
25	1501	1508	1504				B1.2		
25	2024	2032	2024	S12	E09	SF	B1.9		4598
25	2055	2105	2102				B3.1		
25	2312	2323	2319				B6.7		
25	2315	2334	2320	S11	E09	SN	B6.7		4598
26	0017	0022	0020				B1.8		
26	0037	0045	0038	S12	E07	SF	B1.3		4598
26	0118	0127	0119	S12	E07	SF	B1.7		4598
26	0211	0217	0214				B2.1		
26	0232	0254	0238	S11	E06	SF	B3.3		4598
26	0353	0401	0353	S10	E25	SF	B1.5		4600
26	0756	0806	0758	S12	E03	SF	B2.1		4598
26	0854	0900	0858				B1.4		
26	0936	0948	0939	S11	E02	SF	B5.3		4598
26	1136	1142	1139				B1.3		
26	1818	1826	1822				B2.5		
26	1914	1936	1915	S10	E01	SB	C2.2		4598
27	0046	0111	0058				B9.7		4598
27	0218	0240	0222	S09	W04	SN	C2.0		4598
27	0449	0504	0451	S09	W05	SF	C1.2		4598
27	0622	0647	0627	S09	W06	SF	C2.5		4598
27	0915	0920	0918				B1.5		
27	1040E	1148	1053	S11	W12	1B	C8.3		4598
27	1508	1645	1537	S11	W13	SN	C1.9		4598
27	1746	1921	1843	S11	W15	1B	B4.7		4598
27	1832	1856	1847				M1.0		4598
27	2010	2040	2019	S08	W14	SF	B3.9		4598
27	2151	2158	2155				B1.9		
27	2325	2343	2337				B2.6		

GOES S O L A R X-RAY F L A R E S

Preliminary Listing

November 1984

Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	Opt	Imp	Xray	NOAA/ USAF Region
27	0046	0111	0058				B	9.7	4598
27	0218	0240	0222	S09	W04	SN	C	2.0	4598
27	0449	0504	0451	S09	W05	SF	C	1.2	4598
27	0622	0647	0627	S09	W06	SF	C	2.5	4598
27	0915	0920	0918				B	1.5	
27	1040E	1148	1053	S11	W12	1B	C	8.3	4598
27	1508	1645	1537	S11	W13	SN	C	1.9	4598
27	1746	1921	1843	S11	W15	1B	B	4.7	4598
27	1832	1856	1847				M	1.0	4598
27	2010	2040	2019	S08	W14	SF	B	3.9	4598
27	2151	2158	2155				B	1.9	
27	2325	2343	2337				B	2.6	
28	0024	0149	0051	S08	W14	1N	M	1.1	4598
28	0457E	0546	0500	S10	W21	SF	C	1.9	4598
28	0634	0646	0641				B	2.1	
28	0803	0815	0809				B	2.8	
28	0910	0916	0914				B	1.4	
28	0951	1003	0957				B	1.3	
28	1033	1040	1037				B	1.8	
28	1050	1056	1053				B	1.3	
28	1142	1152	1146				B	2.1	
28	1208	1222	1214				B	1.9	
28	1242	1326	1314	S11	W25	SN	B	6.8	4598
28	1306	1315	1311				B	6.6	4598
28	1724	1743	1728	S10	W30	SF	B	3.6	4598
28	1851	1901	1853	S11	W28	SF	B	3.1	4598
28	2014	2030	2019	S09	W31	SF	B	1.4	4598
28	2041	2058	2044	S08	W26	SF	B	7.5	4598
28	2214	2220	2217				B	1.3	
28	2257	2351	2340				B	3.1	
29	0528	0532	0528	S10	W35	SF	B	2.0	4598
29	1350	1400	1356				B	1.0	
30	0809	0819	0814				B	0.8	
30	1000	1008	1005				B	1.1	
30	1856	1906	1901				B	1.9	

GOES S O L A R X-RAY F L A R E S

Preliminary Listing

December 1984

Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	Imp	Opt	Xray	NOAA/ USAF Region
01	0146	0153	0148	S14	W65	SF		B5.0	4598
01	1014	1020	1018					B2.8	
01	1024	1044	1035					B7.3	
01	1045	1052	1048					B6.2	
01	1133	1142	1138					B7.0	
01	1157	1205	1201					B7.2	
01	1228	1235	1233					B3.8	
01	1310	1320	1317					B5.0	
01	1345	1351	1345	N19	E90	SF		B8.0	4602
01	1404	1456	1425					C1.8	
01	1836	1845	1843					B2.1	
02	0053	0101	0054	S10	W55	SF		B1.1	4600
02	0146	0152	0146	S10	W56	SF		B1.9	4600
02	0855	0931	0913					C1.0	
02	1727	1733	1730					B1.0	4602
02	2014	2034	2022					B2.2	4602
03	2100	2114	2107					B2.2	
06	0000	0024	0012					B0.2	4602
06	0607	0620	0608	S03	E26	SF		B0.6	4603
06	0909	0951	0920					B0.4	
06	1645	1655	1649	S03	E22	SN		B1.0	4603
06	2111	2123	2112	N18	E20	SN		B0.6	4602
07	0056	0134	0118					B1.3	
07	0203	0223	0209					B0.7	
07	0307	0337	0316					B0.6	
07	0357	0402	0400					B0.5	
08	0121	0138	0128					B0.4	
08	1101	1109	1106					B0.8	
09	1358	1427	1415					B2.9	
09	1505	1518	1511					B2.4	
09	1649	1741	1719					C1.3	
09	2158	2203	2201					B1.8	
09	2251	2400	2329					B8.2	
10	0212	0236	0223					C1.2	
10	0915	0923	0920					B6.2	4608
10	1530	1538	1535					B1.7	4607
10	1617	1629	1622					B1.7	
10	1658	1709	1704					B2.7	
10	1831	2002	1853	S12	E12	SN		B1.0	4607
10	2245	2250	2248					B1.0	4608
10	2333	2338	2336					B1.3	4608
11	0102	0113	0107					B1.0	
11	0217	0247	0228					B1.9	
11	0334	0354	0344					B2.8	
11	0531	0546	0538					B1.9	
11	0753	0807	0759					B1.7	
11	0958	1007	1002					B2.1	
11	1126	1316	1138	S11	E02	SN		B1.6	4607
11	1744	1807D	1745	N19	E72	SF		B5.0	4608
11	2043	2100	2048	S12	W04	SB		B3.1	4607
11	2206	2228	2220					B1.6	
12	0536	0545	0540					B1.3	
12	1200	1208	1206					B0.9	
12	1250	1328	1314					B7.1	
12	1534	1542	1538					B0.7	
13	0256	0313	0301					B0.9	
13	0319	0335	0326					B1.7	
13	1104	1120	1112					B0.8	
13	1708	1726	1712					B1.2	
13	2136	2141	2139					B1.8	
14	0102	0110	0106					B0.8	
14	1524	1532	1528					B1.0	4607
14	1941	1953	1947					B0.8	
15	0525	0534	0529					B1.4	4608
15	0918	0924	0922					B0.8	4608
15	1047	1058	1054					B3.0	4608
15	1459	1509	1505					B1.2	4608
15	1520	1529	1525					B1.3	
15	1557	1610	1602					B1.2	
15	1707	1724	1716					B2.4	
15	1845	1851	1845	N16	E19	SF		B3.3	4608
15	2009	2018	2015					B6.3	
15	2035	2055	2045					B1.6	
15	2110	2118	2115	N20	E17	SF		B1.7	4608
16	0241	0249	0246					B1.1	
16	0355	0404	0359					B1.0	
16	0711	0720	0716	N20	E11	SF		B5.3	4608
16	1450	1500	1457					B1.5	
16	2214	2223	2221					B0.8	
17	0019	0025	0023					B1.3	
17	0138	0322	0202					B2.6	4608
17	0822	0832	0829					B0.8	4608
17	0917	0924	0921					B0.6	4608
17	1146	1208	1155					B1.0	
17	1525	1539	1533					B1.5	
18	1130	1138	1134					B0.5	
18	1826	1836	1830					B0.6	
18	2006	2020	2011					B0.7	
19	0209	0224	0217					B1.1	
19	0826	0838	0831					B0.7	
19	1320	1556	1435					B0.4	
19	1830	1835	1833					B0.5	
19	1905	1910	1908					B0.8	
19	2115	2124D	2116	S12	E49	SN		B1.1	4609
20	0737	0803	0749					B1.9	
20	1218	1225	1221					B0.3	
20	1513	1524	1519					B1.6	
20	1832	1853	1833	S13	E38	SN		B0.8	4609
20	2349	0001	2356					B0.5	
21	0236	0332	0250	S13	E34	SF		C1.1	4609
21	1131	1149	1140					B0.5	
21	1331	1342	1337					B0.5	
21	1914	1930	1917					B0.3	
23	0536	0615	0558	S14	E04	SF		B4.3	4609
23	0959	0603	0548					B4.3	
25	1926	1937	1926	S12	W30	SF		B0.7	4609
30	1822	1826	1824	S10	W79	SF		B1.5	4612

WORLD DATA CENTER A
FOR
SOLAR-TERRESTRIAL PHYSICS

The ICSU Panel on WDCs has recommended that it would be appropriate courtesy to acknowledge in publications that data were obtained from the originating station or investigator through the intermediary of the WDCs. The following statement is suggested:

"Data used in this study were provided by WDC-A for Solar-Terrestrial Physics, NOAA E/GC2, 325 Broadway, Boulder Colorado 80303, USA."